LIBRARY

Date 5th June 1944

Class Mark Reece Accession No. 31266

LONDON SCHOOL OF HYGIENE & TROPICAL MEDICINE
LIBRARY
5 JUN 1944

OBSERVATIONS
MEDICAL AND POLITICAL,
ON THE
SMALL-POX,
And the Advantages and Disadvantages of General INOCULATION, especially in Cities:

AND ON THE

MORTALITY of MANKIND at every Age in City and Country;

WITH A

Comparative View and regular Tables of all the fatal Diseases and Casualties in London, during the last One Hundred and Five Years, by which about Two Millions and a Half of the HUMAN SPECIES have been exterminated:

INCLUDING AN

Attempt to demonstrate, in what Manner LONDON may save *Two Thousand*, GREAT-BRITAIN and IRELAND between *Twenty* and *Thirty Thousand*, and EUROPE about *Three Hundred* and *Ninety Thousand Lives Annually*.

TO WHICH IS ADDED A

POSTSCRIPT,

Containing the SKETCH of an easy PLAN for new-modelling and essentially improving the LONDON BILLS of BIRTHS and MORTALITY.

The SECOND EDITION Greatly Enlarged: with several ALTERATIONS and CORRECTIONS.

BY W. BLACK, M. D.

LONDON:

Printed for J. JOHNSON, N° 72, in St. Paul's Church-yard.

M.DCC.LXXXI.

312666

ERRATA.

Page.	Line.	
61	15	*for* remnant, *read* portion.
139	laſt	*for* yearly of births, *read* of yearly births.
206	19	*for* Convulſions, *read* Conſumptions.
227	laſt	*for* 1 of 5, *read* 1 of $5\frac{1}{2}$ Lunatics;
228	6	*for* 5, *read* $5\frac{1}{2}$.
238	5	*for* relaxtion, *read* relaxation.
254	22	*for* irritating, *read* imitating.
265	11	*read*, were the mortal diſeaſes *of London* correctly, &c.
267	16	*read*, *as* a defence.
272	19	*for* ambiguity, *read* obſcurity.

CONTENTS.

CHAP. I. Page 1.

The Origin of the Small-pox and Meaſles: the Treatment of the former Diſeaſe by the Arabians and Eaſt Indians; and of Inoculation in India and China. The Tranſportation of the variolous Infection to America; Inoculation when introduced into Europe; its Advantages ſtated; together with the Proportion who die in the Natural and Inoculated Small-pox, 27, *& ſeq. The Controverſy ſtated, whether general Inoculation in London and other great Cities, at the private Houſes of the Inhabitants, would be beneficial or hurtful to the Community at large*, 47, *& ſeq. Baron Dimſdale's different Publications on this intereſting Topick examined, and as the Author conceives refuted: comprizing an Attempt to demonſtrate in what Manner London may ſave* two Thouſand, *Great-Britain and Ireland between* twenty and thirty Thouſand, *and Europe about* three Hundred and ninety Thouſand Lives annually. *ib.*

CHAP. II. Page 110.

Bills of Mortality: when eſtabliſhed in Europe: *their Defects. Of the Mortality at different Ages in City, Town, and Country; of Marriages and Births, and the Medium of Children produced by City and Country Marriages; of the Comparative Numbers of the two Sexes, and their reſpective Mortality; of the Numbers alive at differen, Ages in any Nation: of the Proportion between Cityt Town and Country Inhabitants*, 120, *& ſeq. Various Tables in Illuſtration of the Comparative Mortality,*

Mortality, and Decreaſe of Mankind at every Age in City and Country, 142, *& ſeq. Of Great Cities, and the Principal Cauſes of Depopulation in them, exemplified by* London; *with addditional Remarks on the Defects of the* London *Bills*, 154, *& ſeq.*

CHAP. III. Page 172.

The Diſeaſes which annoy, and occaſion the principal Mortality amongſt Mankind: with a few Tables, each of equal Periods, 15 *Years each, ſhewing by the London Bills, all the fatal Diſeaſes, Caſualties, and Deaths at every Age, in this Metropolis, during the laſt* 105 *Years, and which exterminated about* 2,500,000 *of the human Species: at the ſame Time exhibiting a diſtinct View of the ratio of Mortality, by each Diſtemper and Caſualty*, 196, *& ſeq. Critical Reflections upon thoſe Diſeaſes and Caſualties, and upon the Bills; and upon the different Periods of Life at which each predominates*, 201, *& ſeq. And concluding with a novel Attempt to form a groſs Eſtimate of the Numbers annually deſtroyed by different Diſeaſes and Caſualties throughout Great-Britain and Ireland.*

POSTSCRIPT. Page 268.

The Sketch of a Plan propoſed for new-modelling and eſſentially improving the LONDON BILLS *of* BIRTHS *and* MORTALITY, *and equally well adapted to every other great City.*

OBSERVATIONS
MEDICAL AND POLITICAL.

CHAP. I.

The Origin of the Small-pox and Meaſles: the Treatment of the former Diſeaſe by the Arabians and Eaſt Indians; and of Inoculation in India and China: the Tranſportation of the variolous Infection to America: Inoculation when introduced into Europe: its Advantages ſtated; together with the proportion who die in the Natural and Inoculated Small-pox. The Controverſy ſtated, whether general Inoculation in London and other great cities, at the private Houſes of the Inhabitants, would be beneficial or hurtful to the Community at large: Baron Dimſdale's different Publications on this intereſting Topick examined, and as the Author conceives refuted: comprizing an Attempt to demonſtrate in what manner London may ſave two Thouſand, *Great-Britain and Ireland between* twenty and thirty Thouſand, *and Europe about* three Hundred and ninety Thouſand Lives annually.

THE Roman Empire in Italy and the Weſt of Europe, was finally overturned by the Northern Barbarians in the ſixth century of the Chriſtian era: from that event literature and arts lay for many centuries after, buried in the aſhes of Rome. To the craſh of this immenſe Coloſſus, another memorable cataſtrophe ſoon ſucceeded; a new

religion appeared in the Eaſt, the Arabians under Mahomet, (p. C. 622) ſallied forth ſword in hand to propagate his religious doctrines; and with rapidity ſubdued ſeveral great kingdoms and provinces to the Mahometan yoke.

THREE new diſeaſes, the Small-pox, the Meaſles, and the Spina ventoſa, are firſt deſcribed by the Arabians: the two former diſeaſes had never before been ſeen in any part of the globe, frequented by Europeans; at leaſt no hiſtory is found of them in any ancient medical author, poet, or hiſtorian of either Greece or Rome. Mahomet's followers are ſaid to have exported thoſe two ſpecific poiſons from the deſerts of Arabia. The moſt remote written traces, which I can find of Small-pox, is in Egypt, during the reign of Omar, Mahomet's ſucceſſor. Aaron, a native of Alexandria, is mentioned by Rhazes as having, nearly about that time, publiſhed a treatiſe on the ſymptoms and cure of this diſeaſe. Variolous poiſon was ſoon ſpread by the Mahometans through Paleſtine, Syria, Egypt, Perſia, Spain, and wherever they carried their victorious arms. Many centuries after, the cruſades or holy wars

were

were inſtrumental in diffuſing this exotic venom more widely over Europe; and on the return of the chriſtians from theſe frantic expeditions, Rhazes and Avicenna the two earlieſt writers of repute on the Small-pox and Meaſles, were introduced into our region of the globe.

Rhazes (p. C. 900) and Avicenna, both give a correct hiſtory of the diſtinct and confluent, or more properly of the benign and malign Small-pox, of the diagnoſtic and prognoſtic, the favourable and bad ſigns, and the method of cure. Rhazes was by birth a Perſian, and practiſed at Bagdat. His treatiſe on the Small-pox and Meaſles, is tranſlated from the Arabic, by the care of Dr. Mead, and may be ſeen entire in the latter's works, or in a ſeparate diſſertation. He appears in many inſtances to have treated them judiciouſly, and recommends the cooling regimen to a degree which phyſicians, practiſing in northern climates, might not unreaſonably think bordering on exceſs.

I shall, ſo far as facts and hiſtory enable me to proceed with any probability, endeavour to inveſtigate the origin of the Small-pox and Meaſles; two diſtempers which have

unpeopled more of Europe than all the fierceſt wars, and bloody exploits, with which its annals are ſtained: after which I ſhall give a ſketch of the Arabian and Eaſt-Indian practice in the Small-pox. Doubts and controverſies have ariſen, whether or not thoſe peſts of mankind were engendered in the Arabian deſerts. If they had been known in Greece, Rome, Alexandria, in any of the wide dominions of the Roman Empire, or even in Perſia, we muſt conclude that the Greek and Roman phyſicians, who deſcribed every diſeaſe down to the moſt minute, would not have omitted the hiſtory and cure of two ſo conſpicuous and fatal. Rhazes and Avicenna, notwithſtanding, treat of them as diſeaſes familiar in their time, and without any intimation of novelty; the earlieſt Arabian accounts convey no ſuſpicions of this nature; and therefore lead us to believe, that they were much more ancient than the epoch of Mahometaniſm. Rhazes, who entertained a profound reverence for Galen, ſays that, although that author left no deſcription of, nor regular practice in the Small-pox, yet he ſuppoſes, that Galen alludes to the diſeaſe under the name of peſti-

lential carbuncle and confluent inflammation: this more probably meant putrid ſore throat and ſcarlet fever; and phyſicians are at preſent univerſally agreed, that neither the Greeks nor Romans in their writings, have taken the leaſt notice of Small-pox or Meaſles.

We cannot but conſider it as a moſt extraordinary and even a miraculous circumſtance, that two diſeaſes, whoſe infection is ſo extremely contagious, eſpecially that of Small-pox; the poiſon of which adheres to cloaths, linen, woollen, cotton and porous materials during a long time, and has in this way been conveyed to very diſtant kingdoms; that ſuch a diſeaſe could have been circumſcribed, and its ravages confined for ſeveral thouſand years to a ſmall corner of the globe, not divided by ſea, from the reſt of Aſia, is altogether unaccountable. If Small-pox had diſtilled its venom upon Arabia alone, until the era of Mahomet, that kingdom from the creation muſt have had very little or no communication with the reſt of its neighbours; and it is one proof that Arabia and its inhabitants had not undergone many revolutions. The intercourſe of diſtant nations was then cer-

tainly rare and difficult; but whether the exiſtence of the univerſe is dated ſixty, or according to the Chriſtian code, only about ſix thouſand years back in antiquity, it is inexplicably ſingular, that Small-pox did not much earlier find a vent from Arabia, and that the diſeaſe ſhould not be altogether 1200 years known to Europe.

Dr. Mead thinks, that the Small-pox were firſt generated in the hot climate of Ethiopia, and together with the plague, tranſplanted from thence acroſs the narrow channel of the Red Sea, into the oppoſite continent, Arabia: this is weak conjecture, unſupported by proof or probability. If Small-pox had been a diſeaſe anciently known in Ethiopia, which no one has proved, there were various opportunities for the infection being carried down the Nile into Nubia and the heart of Egypt, countries bordering on Ethiopia, and of the remoteſt antiquity in arts and cultivation. Seſoſtris, one of the Egyptian Kings, made himſelf maſter of Ethiopia, and left behind him ſeveral ſtone ſtatues and monuments of his power; he alſo conquered Paleſtine and Scythia. On the other hand, Sabacon, one of the Ethiopian Kings, in the early period

of

of Egyptian hiſtory, is ſaid to have conquered the latter country, and to have reigned over it fifty years. The Queen of Sheba, who came to viſit Solomon at Jeruſalem, 1000 years before Chriſt, is generally thought to have travelled from Ethiopia or Arabia. Cambyſes, the ſon of Cyrus, after ſubduing Egypt, ſent Ambaſſadors, or rather ſpies, into Ethiopia, and with his army ſailed up conſiderably beyond Thebes; a ſcarcity of proviſions, it is true, obliged him to return back without penetrating acroſs the deſerts, but he conquered ſome of the Ethiopian provinces bordering on Egypt. When Herodotus the Greek, and the father of hiſtory, made the tour of Egypt, he was informed that ſeveral of the natives had travelled into the heart of Ethiopia; and this venerable hiſtorian, who lived upwards of 400 years before Chriſt, gives a rude geographical chart of that country.

That Small-pox ſhould not have burſt over the boundaries of Arabia, until the irruption of Mahomet, is marvellous and inexplicable. The northern Arabian princes had waged war with the Egyptians, the Perſians, and the kings of Aſſyria. Cyrus,

Cambyſes, and afterwards Alexander the Great, reduced ſome of the northern Arabian provinces, to a temporary ſubjection. In the reign of Auguſtus, and the epoch of chriſtianity, before Celſus wrote, and one century and a half before Galen, Arabia to the north was ſubjected to Rome. Auguſtus' generals penetrated even into Arabia Felix, and into Ethiopia. In the ſucceeding or ſecond century, the fleets of Trajan ravaged the coaſts of Arabia, bordering on the Red Sea; and in this emperor's reign, ſeveral of the northern provinces were tributary to Rome. Beſides, the Romans, in the height of their glory, and after the conqueſt of Egypt, carried on a conſiderable trade with Arabia and India: One hundred and twenty veſſels ſailed annually down the Red Sea, traverſed the Arabian coaſts, and arriving at the Malabar ſhores in India, and the iſland of Ceylon, returned from thence loaded with cinnamon, pepper, ginger, ſilk, pearls and diamonds. Mecca too, the Mahometan prophet's birth-place, ſtands on the borders of the Red Sea. Throughout all this intercourſe, variolous infection ſeems not to have diſperſed itſelf over any other country.

On whatever ſide we caſt our eyes, to explore the cankered embryo of Small-pox and Meaſles, we wander through a labyrinth of ſurmiſes and conjectures. Let us now direct our enquiries and reſearches to India.

Mr. Holwel, a gentleman of reſpectable rank and character in the Engliſh Company's ſervice, and who reſided great part of his life in India, (Indoſtan) publiſhed ſome years ago, a very ſenſible treatiſe on the practice of Inoculation, and the medical treatment of inoculated Small-pox in that country. It is believed, ſays he, in India, that Small-pox raged there time immemorial, and that the Bramins or Prieſts, time out of mind, have practiſed Inoculation. In confirmation of this, he quotes the Gentoo Code of Laws, and their ſcripture, which, according to the Bramins, has been now promulgated at leaſt three thouſand, three hundred and ſeventy years, by their original lawgiver, Brama. In this code there is a form of divine worſhip and prayers, inſtituted to be offered up to the *Goddeſs of Spots*, a ſuppoſed female divinity. Theſe ceremonies and religious practices, are ſtill faithfully obſerved during the continuance of Small-pox, Meaſles, and other epi-

epidemical diſeaſes accompanied with eruptions on the ſkin; and certain it is, that no people upon earth have, through a revolution of ages, adhered ſo uniformly and ſcrupulouſly to the eſtabliſhed ceremonies and inſtitutions of their ancient legiſlator, as the Eaſt Indians.

Suspicions and difficulties ſtill ſtart up in our progreſs to evolve, this not only curious, but intereſting ſubject from obſcurity. In the firſt place, chronology, which depends upon oral tradition, is not to be received without many doubts and ſcruples. The Goddeſs of Spots is alſo a vague term: the ſpots might ſignify any eruptive or cutaneous diſeaſe. Mr. Holwel ſays, that Inoculation in India is a practice, the origin of which is too remote to be traced back: this likewiſe probably reſts upon the imperfect and dubious records of tradition. We know that in England, Inoculation is juſt ſixty years introduced, and at that time it had been but forty years known at Conſtantinople, and about one century earlier in Greece. The Turks again aſcribe the origin of the practice to Circaſſia, one of the Aſiatic provinces of Turkey, where its antiquity is not aſcertained

ed by any written memorials. Enquiry hitherto has been puſhed no further back; but perhaps it is to India that Europe is originally indebted for this important diſcovery, through the medium of the Circaſſians.

Neither Rhazes, Avicenna, nor any of the Arabian phyſicians, who wrote in the ninth and tenth centuries, make the leaſt mention of Inoculation. Had variolous poiſon been tranſported from India to Arabia, the phyſicians of the latter nation could not have remained ignorant of a practice, according to Indian tradition, ſo univerſal and ancient, and attended with ſuch happy conſequences: at leaſt, we may fairly preſume that the Arabian writers would not have obſerved a profound ſilence upon Inoculation, if they had heard of its uſe in any part of the world.

The queſtion therefore remains to be determined, whether Small-pox and Meaſles were firſt engendered in the climates of Arabia or India; or whether both countries did not give birth to thoſe ſcourges of the human race; for to derive them from the burning ſands of Ethiopia is mere romance. We know that the variolous diſeaſe is not bred

in

in the human frame, but that it is propagated from one to another by contagion: America, neither in the cold nor torrid regions, had ever known Small-pox, until they were carried to that continent by Europeans. Thouſands in this iſland, and in other countries who keep out of the ſphere of variolous infection, live to a great age, without undergoing the diſeaſe.

Rhazes when recommending cooling ſyrups in Small-pox, adds, "Perhaps the ſyrup of pearls, which the *Indians* deſcribe, and of which they boaſt more than they could have experienced, may be more powerful; for they ſay, that if any one drinks of that ſyrup, though *nine puſtules* have already appeared, there will not come out a tenth." If Indians mean the people of Indoſtan, which is highly probable, this is rather in favour of Mr. Holwel's idea as to the antiquity of Small-pox in India; but let it be conſidered, that Rhazes lived in Perſia above two hundred years after it was ſubdued by the Arabians; and in that interval the contagion might have been diſſeminated amongſt the inhabitants of India.

SUPPOSING for a moment, that Small-pox and Inoculation were as ancient in India, as the Bramins and Mr. Holwel aſſert; we are extremely puzzled to conceive how the diſeaſe could have raged from the time of Brama, above two thouſand years, without ever being heard of in Europe, or ever croſſing over into Perſia: there was no ſea, nor obſtacle to prevent the communication between the two contiguous nations; and the kings of Perſia poſſeſſed a ſmall portion of India. Much of Aſia, ſays Herodotus, was diſcovered in the reign of Darius: he ſent ſhips, which ſailed down the river Indus into the Indian Ocean; and we are aſſured collected a larger annual tribute from the different parts of India ſubject to the crown of Perſia, than from any other of the twenty great Satrapies, or governments into which he divided his immenſe Empire. Alexander afterwards (a. C. 356) conquered ſome of its northern provinces, and ſailed down the whole courſe of the Indus with a large army.

ALL the reflections which I am capable of making upon this ſubject, are now laid before the reader. I can only anſwer for myſelf, and confeſs, that many of my doubts

are ſtill unſatisfied: without new materials, which I have neither leiſure nor opportunity to collect, my opinion muſt remain in ſuſpenſe. Some of our Oriental travellers, and Antiquarian correſpondents, may poſſibly favour us with additional lights to illuminate this dark ſubject, and to conduct to the original ſource of variolous poiſon.

The Arabian practice in Small-pox, as recorded by Rhazes, and more eſpecially the Eaſt Indian management of this diſeaſe, with the manner in which Inoculation is at preſent performed in India, as deſcribed by Mr. Holwel, are highly worthy of medical attention. I ſhall diſpatch both with all poſſible brevity.

If the feveriſh heat and ſymptoms in Small-pox raged with violence, Rhazes directed copious blood-letting, not only before the eruption, but even after it, if the fever had not abated. In imitation of Galen, young perſons under fourteen years of age were cupped only. Water cooled with ſnow was given for drink in large draughts; and if this did not paſs off by urine or ſweat, or the fever abate, he directed that the water ſhould be forced up by vomiting. To promote

mote the eruption of puſtules, the ſick perſon was wrapped up in warm cloaths, his body rubbed all over, and cold water given for drink. For the ſame purpoſes two baſons of hot water were placed one before, the other behind him, and the body ſlightly covered with a ſhirt; the hot vapours aſcending were expected to ſoften the ſkin, and to facilitate the eruption. This vapour was not ſuffered to cool upon the ſurface of the body, but was wiped off with great diligence. Where the ſkin is hard, as in the legs and feet, they were bathed in warm water, and ſometimes emollient poultices were applied to the feet.

Several applications were preſcribed to defend the eyes, if redneſs and itching indicated a crowd of puſtules directed to thoſe tender and important organs. He alſo took great care to protect the throat from numerous puſtules by gargles; and if great hoarſeneſs with ſtraitneſs of breathing threatened future ſuffocation, blood was drawn. To ripen the Small-pox, baſons of warm water were employed as before deſcribed. Puſtules in the legs, that were large and maturated, he directed to be opened by an inciſion.

Should

Should the puſtules be large and numerous, he ſays, they are to be dried up, or the fluid contained in them ſoaked up with fine cotton. In other caſes where the Small-pox abounded with moiſture, the ſick were laid on powdered roſes, rice meal, or a mattreſs ſtuffed with theſe ingredients.

All fleſh meat, fiſh, hot or high ſeaſoned things, and milk were forbidden. Barley water mixed with ſugar, or decoction of raiſins, figs, and fennel ſeeds were given for drink; and in violent fever, the cooling acid juice of pomegranate ſeeds boiled with ſugar, and a ſmall portion of gum arabic; the chamber was alſo kept cool. He deſcribes the compoſition of many ſyrups and oxymels given in the Small-pox: they were a mixture of the juices of ſeveral acid fruits and vegetables, to which vinegar and ſugar were ſuperadded; and ſometimes a ſmall quantity of camphire made one ingredient in the cooling ſyrups and electuaries.

This is nearly the ſubſtance of the ancient Arabian practice in the Small-pox: I am next in chronological order to treat of the Eaſt Indian practice, following Mr. Holwel as my guide.

INOCULATION in India is performed by a particular tribe of Bramins, who are delegated annually for that purpoſe, and who make a tour or ſeparate circuits in travelling parties to inoculate all the diſtant provinces; arriving at the place of their deſtination a few weeks before the uſual return of the natural diſeaſe. The inhabitants who mean to have themſelves, or children Inoculated, know the time of the Bramins arrival, and abſtain according to eſtabliſhed rules univerſally known, for one month before the Inoculators periodical viſitation, from fiſh, milk, and a kind of butter made of Buffalos milk: this is the invariable and only preparatory regimen.

UPON reaching the place of deſtination, the Bramins proceed from door to door to Inoculate; going down one ſide of the ſtreet and returning up the other ſide. The fee for each perſon is about one penny, and they are conſtantly employed from morning until night. They Inoculate generally on the outſide of the arm, the males about the middle, between the wriſt and the elbow; the females between the elbow and ſhoulder. The operator firſt rubs the part with a dry cloth, during eight or ten minutes; then with a ſmall

inſtrument made like a crow-quill, and ſharp at the point, he makes, in a ſmall ſpace, which might be covered with a ſilver groat or ſix-pence, ſeveral ſlight ſcratches, ſo that the ſmalleſt appearance of blood may be perceptible: a pledget of cotton impregnated with variolous matter is then applied, after being a little wetted with water from the *Ganges*, (every country has its ſuperſtitious follies) over all a bandage is rolled; ſix hours after the bandage is removed, and the cotton left to fall off of its own accord.

VARIOLOUS matter taken from Inoculated Small-pox of the preceding year, is generally uſed for Inoculation; but is never received nor preſerved from natural Small-pox, however mild and diſtinct. There are many inſtances, ſays Mr. Holwel, of the variolous matter entangled with cotton, and kept cloſe ſtopped from the air in a bottle during five or ſix years, at the end of this period proving active.

THE ſame prohibitory regimen in diet is continued through the diſeaſe, as before Inoculation: but what will appear ſtill more ſingular, and to us at firſt ſight raſh, every morning before Sun-riſe, and every evening after

after Sun-ſet, the patients, from the firſt day after Inoculation, are ſtripped naked, and ſluiced over the head and body with buckets of cold water: in this manner the diurnal cold bathing is continued until the eruptive fever comes on, which by ſuch means is rather haſtened, and commences about the cloſe of the ſixth day. Then a few days during the eruptive fever, they deſiſt from cold bathing, leſt fermentation ſhould be interrupted, and at that particular time they conceive that the blood ſhould not receive any additional commotion: but on the puſtular eruption coming out to the ſurface, which is generally a proceſs of three days, they again reſume the cold water, and continue it to the end of the diſeaſe, in order to expel all the remains of noxious matter from the internal parts.

Mr. Holwel affirms, from his own experience in India, that when puſtules have ſunk, and the ſick appeared in the moſt imminent danger, he has ſeen marvellous effects from a few gallons of cold water thrown over the head: the puſtules which had ſubſided filled again ſuddenly by this ſimple remedy, as if by enchantment. In caſes of

Meaſles, which did not come out freely, and where there ſeemed great anxiety and proneneſs to faint, Rhazes adviſed frictions and immerſion in cold water. In India, the water is poured out of buckets by ſervants without intermiſſion, and at the diſtance of ſix or twelve inches above the head. In this mode of application, its ſhock and ſeverity is ſaid to be much greater than by immerſion of the whole body in a cold bath. The Bramins ſuppoſe that the ſudden ſhocks haſten fermentation, and, by increaſing the motion of the heart, drive all offenſive particles from the internal parts, to the ſurface and extremities.

The variolous puſtules, when ripe, are all opened with a ſmall pointed thorn. In this work the Bramins perſevere with aſtoniſhing patience and diligence, for ſeveral hours at one time; opening, by degrees, all the puſtules, whether the diſeaſe be mild or otherwiſe, and whilſt the matter is in a fluid ſtate. This evacuation, they ſay, prevents inflammations, weakneſs of the eyes, boils, and other eruptive diſorders, which frequently follow Small-pox; it alſo prevents, or at leaſt mitigates, the danger of ſecondary fever in the height and turn of the diſeaſe. In the confluent

Small-

Small-pox, it has been obſerved, that the puſtules ſometimes fill ſuddenly and repeatedly after being opened, *five*, *ſix*, and even *eight* times: a few hours, however, are ſuffered to elapſe, before a ſecond repetition of the ſame operation, and which, in the artificial diſeaſe, I preſume is very ſeldom required. By theſe apertures the corrupted fluids are ſucceſſively emptied, and room allowed for what remains to diſcharge by the outlets which nature points out. Every puſtule is conſidered as a ſmall abſceſs, or boil, that has reached the point of maturation, and whoſe matter ſhould be drained off, by an external opening. About a dozen puſtules are opened with great gentleneſs at one time, then the matter is abſorbed with a linen or cotton rag dipped in warm water and milk; in this way they proceed gradually over the whole body, face, and extremities. The ſlender conical thorn is preferred to a broader inſtrument, becauſe the external air is not admitted through ſo ſmall an orifice, to cloſe up the excretory veſſels, and the further ſecretion of variolous matter. If the puſtules were rudely torn open, a violent inflammation might be excited

A COOLING diet is preſcribed through the diſeaſe. The Inoculated are forbidden to confine themſelves to the houſe, and are expoſed to every wind that blows: all the fruits with which the climate abounds are permitted, ſuch as plantain, ſugar-cane, and water-melons; and cold water, or rice gruel, uſed for common drink. The number of puſtules from Inoculation in that country, are generally from *fifty* to *two hundred*. A diſcharge from the ſcarified part where the variolous poiſon is inſerted, generally follows throughout the diſeaſe; but even if this running enſues with a few puſtules about the wound, yet none upon the reſt of the body, the perſon need have very little apprehenſion of being ever again ſeized with the diſeaſe. This exactly coincides with the obſervations of European Inoculators.

MR. Holwel informs us, that Inoculation in India has to encounter prejudices as in Britain, but almoſt all recover: he alſo aſſures us, that the diſeaſe is very little ſpread from this artificial ſtock of poiſon, and that it does not exaſperate the malignity of the natural Small-pox, which in that country are exceedingly fatal.

THIS

This ingenious gentleman during twenty-eight years, in which he reſided in the province of Bengal, obſerved that every *ſeven* years, Small-pox returned periodically, and always proved of a malignant kind. If the ſeptennial recurrence ſhould, after a longer trial, a century for inſtance, be found a conſtant law, it would be an additional circumſtance in favour of the influence of the Pythagorean or harmonic number. During the hot ſeaſon in March, April, and May, this periodical Small-pox rages with unbridled fury amongſt natives and foreigners, until the rains in June abate its fury. For this reaſon the Inoculators uſually begin their work in February, before the return of the natural diſeaſe is expected, and that diſpoſition of the air favourable to rouſe the dormant venom into activity. In the rainy ſeaſon there, Mr. Holwel has ſeen a malignant Small-pox, which killed numbers, ſo early as the ſecond or third day. He has remarked in this peſtilential ſpecies, that turkeys, capons, fowls, poultry, and other ſpecies of the feathered tribe, were ſeized with the infection and died in conſiderable numbers, as in caſes of the plague. A parrot that died of

this diſeaſe he opened, and found the inteſtines lined with puſtules. Authors have mentioned ſome rare inſtances in England, where a highly malignant Small-pox infected poultry and pigeons.

Let us now carry our inquiry to the extremity of Aſia, and ſearch for further information reſpecting the Small-pox and Inoculation, amongſt a nation which diſputes antiquity and chronology with the Egyptians.

In the *Lettres Edifiàntes & Curièuſes*, written in the preſent century, we are informed by a miſſionary Jeſuit then reſiding at Pekin the capital of China, and who, with ſeveral others, had embarked on the fruitleſs errand of converting that nation to Chriſtianity, that Inoculation had been practiſed there from about the middle only of the laſt century. The Chineſe method was to roll up in cotton a few of the dried ſcabs, which had fallen off from the variolous puſtules, and which were kept ready for uſe in a bottle cloſe ſtopped with wax: ſmall pledgets of theſe were put up the noſtrils, where the ſkin is thin, and in that way the artificial diſeaſe was in a few days communicated; or the dried

ſcabs

ſcabs powdered and ſnuffed up the noſe, anſwered the ſame purpoſe.

The letters above alluded to relate, that during the year 1724 a virulent Small-pox was ravaging Tartary, and that the emperor of China, with a laudable humanity, had diſpatched the phyſicians of his court to Inoculate the Tartars. The ſucceſs of the phyſicians, our author concluded, was great, as they returned back loaded with rich preſents. In the ſame letters we are told, that Inoculation was firſt practiſed on the eaſtern coaſt of China towards Japan, and in the province of Kianan, and therefore on the oppoſite ſide of that extenſive empire to India. Indeed there is no ſimilarity in the Eaſt Indian and Chineſe Inoculation, that could induce us to think both to be derived from the ſame original: chance in all probability gave riſe to the diſcovery in both nations; reaſon and obſervation afterwards improved this fortuitous hint.

So far as I can learn we do not know how ancient Small-pox is in China; nor in my opinion, have we yet ſufficient evidence to date the origin of Inoculation in that country. Travellers have been too frequently impoſed upon, and have ſo often treſpaſſed upon

the

the credulity of their readers, that it is prudent in matters of conſequence, and without corroborating teſtimony, to receive their reports with caution and diſtruſt.

The beginning of the 15th century, every one knows, is one of the moſt brilliant epochs in the annals of the world; but mankind did not receive the fruits of the new and illuſtrious diſcoveries then begun in geography, literature, and arts, without ſome alloy. In 1492 Hiſpaniola, an iſland ſituated at the weſtern verge of the Atlantic, was diſcovered by Columbus, and by other adventurers in ſucceſſion, the contiguous extenſive continent of America. A general exchange of diſeaſes, remedies, and natural productions, ſoon enſued between Europe and this new diſcovered continent. In return for the Venereal diſeaſe, a diſtemper never before heard of in any part of the old world, the Europeans *firſt* communicated to the American Indians that dreadful ſcourge of the human race, Small-pox. There, at different intervals, it committed ſuch inexpreſſible carnage amongſt the unſeaſoned natives, as had nigh depopulated that continent. In 1520 the infection was carried into Mexico by a negro ſlave of Spain,

when

when half of thoſe infected died of the diſtemper: in 1588 it was carried into Peru, and ſtill later into Paraguay, where Small-pox are ſaid to have proved more fatal to the natives than in any other part of the world, hardly any recovering from the diſeaſe: amongſt the adult Indians of Brazil, who uſed to go naked, and to paint their ſkin, it was generally certain death.

EUROPE and America were but lately ſupplied with the only ſafe and defenſive ſhield, worthy of divine original, againſt this inveterate enemy. Our earlieſt information in Britain of Inoculation, and its utility in ſurprizingly diminiſhing the mortality of Small-pox, was from Emanuel Timoni, a Greek phyſician, in a letter to Dr. Woodward, and dated at Conſtantinople, 1713. In 1715, in another epiſtle from the ſame author to the Royal Society of London, he ſays, that forty years before the above date, Inoculation had been introduced into the capital of Turkey, from two of the Aſiatic provinces bordering on the Caſpian Sea, Circaſſia, and Georgia. An account of the Circaſſian practice may be ſeen in Motraye's Travels to that country in 1712. Another eye-witneſs of Inoculation

in

in Turkey, Kennedy, an Engliſh ſurgeon, in the ſame year with Timoni, publiſhed ſome obſervations on the ſubject. Pylarini's account of Inoculation at Conſtantinople, where he then practiſed medicine, was publiſhed at Venice, 1715; in which year ſeveral thouſands were inoculated in the Turkiſh capital. The Turks themſelves as Mahometans and fataliſts, and obſtinately attached to the dogmas inculcated in the alcoran, which command them not to fly even from the plague, rejected inoculation, and it was adopted only amongſt the Greeks, Armenians, and Chriſtians. In Greece and the adjacent iſland of Candia it had been a practice during one or two centuries earlier. At Egypt, Tripoli, Tunis, Algiers, and other provinces of Africa ſubject to Turkey, Inoculation had likewiſe been long known, and had extended ſo far ſouth on the African continent as the river Senegal: probably the practice was firſt carried to theſe countries, by the provincial ſoldiers, ſent from Circaſſia to the remote garriſons.

Besides the ſecurity afforded by Inoculation, we learn that the Circaſſians and Georgians were induced to this practice by an additional

ditional and powerful motive, avarice, in order to preſerve the beauty of their female children, and to ſell them at higher prices to the rich Turks and Perſians as miſtreſſes. The variolous matter they transferred by a ſmall ſcratch made in different parts of the body, previouſly dipping the point of the needle into a ripe puſtule, or into a nut-ſhell full of variolous infection. Many Greek women at Conſtantinople exerciſed the function of Inoculators. They alſo unneceſſarily made four or five ſcratches, reſembling in moſt reſpects the Circaſſian method; and accompanied the operation with ſome ſuperſtitious ceremonies and tricks, to render it more acceptable to the vulgar and religious notions; a plaſter was then laid over theſe punctures, and after ſeven or eight days, a ſlight fever or ſickneſs enſued, ſucceeded by an eruption of puſtules; but ſeldom or never any violent ſymptoms or ſecondary fever, ſo fatal in the natural Small-pox at their height, were obſerved to accompany the Inoculated. Timoni reports, that they were indifferent whether the variolous infection was engrafted from natural, or artificial puſtules.

In 1717, Lady Mary Wortley Montague, the elegant letter-writer, and wife to the Engliſh Ambaſſador at Conſtantinople, had her ſon Inoculated in that capital, by Maitland, an Engliſh ſurgeon. 1725, Dr. Mead and Mr. Maitland made the experiment of Chineſe Inoculation upon one of ſeven condemned criminals in Newgate, and of the Turkey practice upon the other ſix, all of whom by that means obtained a pardon from the king, and recovered; but in the former caſe the brain was dangerouſly affected, and in all probability the Chineſe practice will not be hereafter revived nor imitated by any other nation. On Lady Montague's return to England in 1722, her young daughter was Inoculated by a ſlight inciſion on each arm, and is the firſt perſon of any rank inoculated in this iſland. Timoni had ſubſtituted this ſimple mode of conveying the artificial diſeaſe. A few months after Miſs Montague, the Princeſs Royal and ſome others of the Royal Family were Inoculated.

1722 Inocultation was carried to Boſton in North America, and attended with the ſame happy effects as in London, amongſt the

the handful who had the reſolution to entruſt their lives to that protection.

Fears and ſtrong prejudices almoſt univerſally prevailed againſt a practice ſo novel. Several phyſicians wrote againſt Inoculation: they condemned it as a hazardous experiment, as tending to multiply infection, and, as they argued, the number of deaths: they alſo alledged, that in the ſmall portion of variolous poiſon, inveterate hereditary diſeaſes might be communicated. Many divines and fooliſh bigots, inflamed with a miſtaken zeal, preached againſt the practice as impious, and an inſult to the divine decrees; they exclaimed that it bore a ſtronger reſemblance to magic than to phyſic; and to crown this fiery rhapſody, that the devil had Inoculated Job. Others with ignorant effrontery aſſerted, that Inoculation would not prevent the attack of the natural diſeaſe. A variety of objections and falſhoods were invented to depreciate this important diſcovery. In 1723, a conſiderable mortality happened in London by Small-pox, which the opponents aſcribed to Inoculation; but Dr. Jurin, its foſtering patron, proved, that the mortality by this diſeaſe was in January and February, and that

no perſon was Inoculated before the twenty-ſeventh of March, and then a very ſmall number. The ſeverity of this natural epidemic notwithſtanding contributed with the cauſes before mentioned, to increaſe the public diſtruſt in this iſland, and to turn Inoculation into diſcredit.

Dr. Jurin, from 1723 to 1727, publiſhed ſeveral detached papers in the Philoſophical Tranſactions, comparing the mortality of natural Small-pox, and the numbers loſt by Inoculation. From a great maſs of materials, and many thouſands of ſick in different parts of England, he found that *one* of *five* or *ſix*, at a medium, died by the natural diſeaſe; for in its malignity, there is every where in different years various gradations: this is the general meaſure of many years mortality, and is the reſult of later and more enlarged calculations. In Turkey, in the northern parts of Europe, and in Africa, throughout the whole extent of the Mediterranean coaſt, Small-pox is ſtill more rapacious: in ſeveral inſtances it has been ſo virulent, as to kill nearly one half of the infected.

Again, of thoſe then Inoculated one of fifty died: but amongſt them were included young

young infants, many of whom are cut off by convulſions, which was laid to Inoculation; and ſome aged perſons, pregnant women, and valetudinarians. Beſides, a very few trials only had been made of its ſucceſs: Jurin's liſt of all the Inoculated in London, and other parts of England, from 1721 to 1727, amount only to ſeven hundred and ſixty-four.

I SHOULD not omit to mention, that in a part of our Iſland called Wales, a cuſtom prevailed before the introduction of Inoculation from Turkey, of engrafting the Small-pox, and ſometimes with ſuperſtitious practices. A ſmall wound or ſcratch was made on the hand or arm with a pin, or a knife, and the variolous matter rubbed in; now and then the pocky ſcabs were merely rubbed in the hollow of the hands. Dr. Williams, a phyſician of Pembrokeſhire in Wales, firſt informed Dr. Jurin by letter of this practice; it was there a very ancient cuſtom amongſt ſeveral individuals, and could not be traced back to its origin by the oldeſt perſons: the ſame fact is well authenticated by collateral evidences. A ſimilar cuſtom prevailed in ſome parts of Denmark in the laſt century,

and is related by Bartholine; but the bulk of both nations, and medical men univerſally ſeem to have been entirely ignorant of, or to have overlooked this domeſtick practice: it appears to have been very ſeldom exerciſed, and its peculiar advantages over the natural diſeaſe, concealed from the world, until we received illumination from Turkey.

Inoculation from 1727, languiſhed in England and America until 1738, when it was again revived, and this iſland had the courage and good ſenſe to ſet the example to the reſt of Europe. (1738) of two thouſand Inoculated in the counties of Suſſex and Hampſhire, but two died; in the ſame year of one thouſand Inoculated at all ages in one province of North America, South Carolina, and in the moſt unfavourable ſeaſon during the ſultry heats of June, July, and Auguſt, but eight died. The havock then made by the natural diſtemper drove the inhabitants to adopt the only remaining reſource from deſtruction. Middleton in England Inoculated eight hundred, and loſt but one. Other Inoculators loſt one out of three and four hundred. In the Weſt India iſland St. Kitt's, of three hundred negroes Inoculated,

lated, not one died. Ranby Inoculated a thouſand in England and without one blank. In 1746, a ſmall charitable Hoſpital was erected at Pancras, in the environs of London, for the double purpoſe of Inoculation, and to receive during their ſickneſs, perſons of indigent circumſtances who ſhould be ſeized with natural Small-pox Of eighteen hundred Inoculated in this hoſpital in the courſe of ſeveral years, but eight died. At another period, of four hundred and ninety-ſix Inoculated at this aſylum, but one was loſt. In the year 1759, the numbers Inoculated at Pancras were, five hundred and ninety-three, and many of thoſe adults, yet but one died. The Suttons of late years, by their own computation, Inoculated throughout London, and many parts of England, about forty thouſand, and as they aſſert did not loſe one hundred. In Pennſylvania and other provinces of North America, of 8000 Inoculated only 19 died, or 1 of 467

I SHALL follow the reception and ſucceſs of this ſignal diſcovery throughout the other kingdoms of Europe. In 1748 Inoculation was introduced into Amſterdam by Dr. Tronchin, who began the experiment upon his

own ſon, and before 1754, Inoculation had ſpread into ſeveral other towns of Holland. In 1754 a malignant Small-pox was committing ſevere ravages in the Eccleſiaſtical State of Italy; and on this alarming extremity, ſeveral mothers trembling at the impending deſtruction of their whole family, from the uncommon mortality of the natural epidemic, Inoculated their children when ſleeping, and with the deſired ſucceſs. At Leghorn, where ſome Engliſh families were ſettled, Inoculation had been a few years earlier in uſe. Haller and Tiſſot, near the ſame time, laboured ſtrenuouſly to introduce the practice into Switzerland: on the other hand, De Haën, of Vienna, and phyſician to the royal family, wrote impetuouſly againſt the innovation, but was ably replied to by Tiſſot. Some years after, Dr. Gatti, a profeſſor of medicine in the univerſity of Piſa, in Italy, Inoculated one thouſand, and without a ſingle miſcarriage.

In 1723, a few phyſicians and patriots of France, had propoſed to introduce Inoculation into that kingdom; and nine Theological Doctors of the Sorbonne, who were conſulted upon the occaſion, declared in favour

vour of the experiment.—Of theſe humane efforts, one Dr. Hecquet, a ſworn foe to all modern innovations in medicine, and an impetuous partizan, declared his diſapprobation. The Royal Cenſor, or Reviewer, alſo ſtamped this conceited traſh of Hecquet's with the ſeal of authoritative ignorance, and conſpired with him in the condemnation of Inoculation. Jurin's Eſſays were not tranſlated nor publiſhed in Paris before 1725, and then they were accompanied with the comments and invectives of his fiery opponent, the notorious Wagſtaaf.

From 1724 until 1752 no perſon in the medical profeſſion in France wrote upon Inoculation: throughout that long interval it ſlept in profound oblivion, when the Engliſh publications, and enlarged experience of Inoculators were revived, and expoſed to view as a recommendation of the practice.

1754 the public attention of France was further awakened by Mr. Condamine's excellent papers read before the Academy of Sciences, in vindication of Inoculation; and in 1755 and 6 a few of the principal nobility were inoculated at Paris. Numerous pens in that kingdom were then waging

warfare in defence and proſcription of this novel experiment; and at the end of four years, Mr. Condamine could collect a liſt of 200 perſons only Inoculated throughout all parts of France. So precarious was its eſtabliſhment for many years, that at one time Inoculation was interdicted in Paris by an order of the parliament, and was tolerated in the ſuburbs only.

In 1755 Mr. Shultz returned to Stockholm from London, where he had been ſent by order of the Swediſh court, to enquire into the ſucceſs and mode of Inoculation, particularly at our Inoculating hoſpital; and in that year a ſmall building for a ſimilar purpoſe was erected at Stockholm. Of 1200 Inoculated in Sweden before the year 1764 not one died. Denmark adopted the practice about the ſame time with Sweden. What little progreſs Inoculation may of late years have made in Poland and Ruſſia, or in two ſouthern kingdoms of Europe, Spain and Portugal, I have not good information.

From the different regiſters of ſucceſs and miſcarriage under Inoculation, and at this day it would be an eaſy matter to multiply piles of ſimilar examples, we are well authorized

to

to draw the following concluſions. According to the immature calculations of Jurin, of thoſe Inoculated *one* of *fifty*, and of Dr. Mead *one* of *every hundred* died; but by the accounts of later date, collected by practical Inoculators and Phyſicians, on an average, only *one* of every *five hundred* Inoculated die: from the general tenor of Mr. Holwel's Pamphlet, this laſt porportion would ſeem to be very moderate alſo in India; and in ſupport of this calculation, which I believe to be undervalued, a variety of facts have been laid before the reader.

Though the ſucceſs of Inoculation is unparalleled in affording ſecurity from a dangerous diſeaſe, and in operating almoſt as a miracle for the preſervation of mankind, yet long habits, ignorance, and ſuperſtitious prejudices obſtructed its admiſſion for a long time; it had to encounter in every kingdom an hoſt of opponents, and by very ſlow degrees got a footing. The practice even at preſent is far from being ſo univerſally diffuſed and encouraged as it merits. I ſhall hereafter demonſtrate, that in England, but more particularly in London, Inoculation is

unfortunately yet in its infancy, and by no means ſo general as writers have ſuppoſed.

AMONGST the vague objections urged againſt Inoculation, it was affirmed, that the natural diſeaſe might afterwards return, Maitland, and all the writers who were acquainted with the practice in Turkey, flatly contradict this looſe aſſertion. The veracity of the few rare caſes of that kind produced, are extremely ſuſpicious, and do not probably amount to one in a hundred thouſand: ſome equally ſingular caſes are related of perſons undergoing the natural diſeaſe a ſecond time; but they both happen ſo ſeldom, as to be trifling exceptions to a general law. The puſtular eruptions which have been miſtaken for the real Small-pox probably gave riſe to this error: they are merely what the Engliſh call *Chicken-pox*, the French *Verole Volante*, and the Italians *Ravaglione*; they do not often occur, and are ſeldom dangerous. It has often been tried in Turkey, and other kingdoms of Europe, by a ſecond Inoculation, and by putting them into a bed with perſons ill of natural Small-pox, but in either way found impracticable to renew the diſeaſe.

OTHERS

Others ſurmiſed, that infectious and hereditary diſeaſes might be inſtilled together with variolous infection. Univerſal experience proves theſe to be chimerical conjectures, and in the natural diſeaſe there is greater danger of ſuch imaginary combination of Infections; for in chuſing variolous matter it is eaſy to ſelect it from healthy conſtitutions. Experiments have been made with variolous matter taken from perſons labouring at the ſame time under the venereal diſeaſe, yet the latter infection was not ingrafted with Inoculated Small-pox. The true Scurvy, however virulent, every common ſeaman knows, is neither contagious nor infectious, neither is the Scrophula.

Religion was alſo diſtorted, and a ſuperſtitious ſtumbling-block thrown in the way to diſcourage the world from Inoculation; becauſe, ſay they, a few happen to die from the artificial diſeaſe; granted, but the argument can influence blind bigots, or weak minds only; for it is much more powerful againſt matrimony and population, about three of every two hundred women dying in child-bed, or of diſeaſes attending that ſtate.

INOCULATION ſeldom or ever fails to convey the diſeaſe. The puſtules are in general few; and although only one or two ſhould appear, the perſon is ever after ſeaſoned againſt that diſeaſe. In Europe and India, there have been numerous inſtances where no puſtules appeared, but only a ſlight inflammation, and afterwards a ſuppuration of the ſcarified part, in which the variolous matter was ingrafted; yet no Small-pox have afterwards enſued.

EXCLUSIVE of the immediate havock by this direful diſeaſe in the natural way, numbers who ſurvive are diſfigured; an object in the female Sex of more conſequence both to the happineſs of individuals, and in a political view, as impeding population, than ſome ſtoical reaſoners may pretend: in multitudes of others, the natural diſeaſe is followed by complaints of the breaſt and conſumptions, and a conſiderable number too annually in this iſland are from Small-pox deprived of their eye-ſight. No bad ſymptoms of this kind follow Inoculation; ſeldom any conſiderable ſickneſs or ſecondary fever attend it. Infection has been taken from a virulent malignant Small-

pox,

pox, and in the way of Inoculation produced a mild diſeaſe.

Calculations make but a very ſmall ſhare of adults to have eſcaped the attack of Small-pox: in great cities perhaps fewer live to mature age, and reſiſt variolous infection. In them eſpecially it is prudent to anticipate ſurrounding danger and certain hazard. Entire families have frequently been cruſhed in one general wreck by this diſtemper; and certainly both ſexes arrived at the age of puberty, who have not paſſed over this perilous abyſs, cannot but feel, on many occaſions, uneaſy ſenſations of apprehenſions and dread.

In the preciſe mode of ingrafting variolous infection, Authors and Inoculators are not agreed: the Bramins, and ſeveral of the European profeſſed Operators make only one ſimple inciſion; others with us make one gentle inciſion on each arm, to be ſure of conveying the poiſon, and to prevent a poſſibility of miſcarriage. Dr. Tronchin removed the thin external ſkin by a ſmall bliſter alone. Cotton is uſed by ſome, by others a thread, each impregnated with matter from a ripe puſtule; theſe are laid on the ſcratch or

wound,

wound, and over all a plaſter. Some again dip the point of a lancet, others a needle or pin into a ripe puſtule, and by a ſlight ſcratch in both arms convey the diſeaſe to another perſon: this may be done to children during ſleep, and no plaſter is required: but in approaching too near the ſick to be Inoculated from one of their puſtules, there may be danger of catching the natural diſeaſe, or it may be caught from the attendants. Care likewiſe ſhould be taken not to Inoculate from the Chicken-pox, leaſt the true natural diſeaſe ſhould afterwards return. Dr. Sims aſſures me, that he has ſeen ſeveral inſtances where Inoculation took effect from this ſpurious Infection, after which the ſame perſons were Inoculated from the real Infection, which produced the uſual ſymptoms and appearances. The Bramins uſe the *artificial* matter of the preceding year, preſerved in a bottle cloſe ſtopped; Inoculators with us generally employ freſh matter, and taken indifferently from natural or artificial puſtules. Some preſcribe elaborate and complicated preparation by diet, mercurials and purges, previous to inſerting the variolous infection. Dr. Gatti, before

men-

mentioned, and who wrote a ſenſible treatiſe on this ſubject remarks, and I believe juſtly, that the more ſimplicity is uſed in transferring the diſeaſe artificially, the practice and public benefit are likely to be more univerſal. His only care was to ſee that the ſubject was in health: freſh air and amuſements were the only ſeverities of his regimen throughout Inoculation. Several of our European Inoculators often, with officious induſtry, exerciſe a ſuperfluous preparatory parade of profeſſional and ſcientific craft: young children eſpecially may diſpenſe with many of theſe redundant ceremonies.

With reſpect to the proper ſeaſon for Inoculation, the cuſtom with us is to avoid the extremes of heat and cold—in the northern kingdoms of the continent the heat is ſeldom too intenſe to prevent this operation. A univerſal rule is, or ſhould be, that where the natural diſeaſe appears in the neighbourhood, we are to diſregard ſeaſon; and whether the air is chilled with froſt, or ſcorched with heat, we are of the two evils to chuſe the leaſt, and to fly inſtantaneouſly to Inoculation.

THE introduction of Inoculation into England, and into other parts of Europe, the authors, and controverſies in ſupport and detraction of the practice, may be learned from Dr. Jurin's papers, from Dr. Kirkpatrick's Hiſtory of Inoculation, from "Hiſtoire de l'Inoculation, par Mr. de La Condamine," and from the Authors already quoted in this general hiſtorical ſketch.

AN alarm has of late years been created againſt general Inoculation in London and other great cities, at the private houſes of the inhabitants, and in printed treatiſes it is repreſented as big with danger to the public ſafety: ſuch I have reaſon to believe is the opinion of many medical men. I hope, notwithſtanding the high authority of many foreign writers, of Baron Dimſdale in London, of the Critical Reviewers, and ſome periodical magazines, effectually to remove every objection to general and univerſal Inoculation; and that upon peruſal of the following ſection, which is dedicated to that ſubject, the broachers and leaders of this ruinous alarm may be converted to as public a recantation of their errors.

SECT. I.

Whether general Inoculation in London and other Cities, at the private Houſes of the Inhabitants, would be beneficial or hurtful to the Community at large.

THE London Bills of Mortality ſhow, that within the laſt hundred years, in this city alone, upwards of two hundred thouſand perſons have been cut off by one ſingle diſeaſe, Small-pox. As in all other epidemical diſeaſes, ſo in Small-pox, there is a fluctuation in the deaths, ſome years they are high and in others lower; but examine the London Bills ſo far back as 1629, when the different diſeaſes of thoſe who died were firſt inſerted, you will not find in all the interval from that down to the preſent time, that deaths by Small-pox in any one year, ever amounted to four thouſand. 1772, which is the higheſt riſe, they ſtand at three thouſand, nine hundred and ninety-two: "communibus annis" about two thouſand annually are deſtroyed in London by this unrelenting foe.

We are to remember, that in ſeveral populous pariſhes the births and deaths are not regiſtered, otherwiſe the London catalogue of funerals would appear conſiderably greater; and that from 1629 to 1733, twenty large pariſhes have been added to the original bills; to judge fairly therefore of the effects of Inoculation in London, we ſhould not go far back into thoſe records.

Let it be ſuppoſed, that two thouſand annual deaths by Small-pox fall out of ſix hundred thouſand inhabitants in London, and contained within the bills. I only mean to ſettle groſs proportions, and to come near the truth; and computing the inhabitants rather more numerous than what ſome calculators will allow, is for our purpoſes a ſafe error. If out of ſix hundred thouſand inhabitants, two thouſand die annually of Small-pox; then throughout *nine* millions in Britain and Ireland, *thirty* thouſand annual deaths may be ſet down to this diſeaſe. Numbers without doubt in the country live and die at an advanced age, without undergoing this diſtemper; on this account diminiſh the entire national and annual loſs of the two kingdoms, if you think proper, to a half of thirty; ſtill it will be obvious,

obvious, that by conſtantly operating, many more of the inhabitants of a nation are ſwept away by Small-pox alone, than by the moſt bloody wars, which break out at diſtant intervals only, after a hollow truce of ſeveral years pacification.

BARON Dimſdale had the honour to be ſent from England in order to Inoculate the preſent illuſtrious Czarina of Ruſſia. He there publiſhed a treatiſe on the Small-pox and Inoculation; and ſince that it has been reprinted in London with the Baron's additional annotations. This Author ſays, page 15th, " we ſee that even in London, where " the climate is temperate, the diſeaſe well " known, and the treatment of the ſick " very ably conducted, this *ſingle diſeaſe* " *deſtroys more than the eighth part of the in-* " *habitants*;" and in page 16th, he proceeds thus: " If therefore in London, which en- " joys the many advantages already recited, " *more than two thouſand perſons die annually* " *of Small-pox*, we may ſurely ſuppoſe that " the loſs which Ruſſia in its whole extent " ſuſtains in the *ſame ſpace of time* amounts " to *two millions* of ſouls."

THE Baron's laſt propoſition is egregiouſly erroneous, it is an exaggerated calculation, repugnant to fact and reaſon. Allowing that through Great-Britain and Ireland, the mortality by Small-pox keeps pace with London, and that out of nine millions of inhabitants, thirty thouſand fall annual ſacrifices to this diſeaſe; how many can we rationally conclude would be the total mortality by the ſame diſtemper, throughout Europe, in an equal period? Mr. Voltaire, if I recollect right, calculates the inhabitants of Europe at one hundred and ſeven millions; probably one hundred and twenty millions, the number formerly ſaid to be contained in the Roman Empire under Trajan and the Antonines, will be a more exact eſtimate. On this ſuppoſition, and taking Britain and Ireland as a radix, the annual deaths by Small-pox throughout all the kingdoms of Europe, will amount only to *four hundred thouſand.*

RUSSIA by ſeveral calculations contains fourteen millions of inhabitants: no authentic enumeration that I have conſulted, makes the ſubjects of that Empire to exceed ſixteen millions; and in theſe are included all who inhabit the extenſive and inhoſpitable deſerts

of

of their Aſiatic dominions in Siberia. It is therefore impoſſible that *one eighth* of thoſe, or two millions, can be annually cut off by all the diſeaſes united: 1 of 32 to 35, embracing Town and Country, is nearer the uſual decreaſe. There is no kingdom in Europe comparatively, that ſuffers one third, very few one fourth of the annual waſte by every deadly diſeaſe combined, which Baron Dimſdale aſſigns to Small-pox alone in Ruſſia. An "actual Counſellor of State," a title annexed to Baron Dimſdale's Ruſſian honours, ſhould be a little better informed in hiſtory and political arithmetic, and particularly in the number of the Ruſſian inhabitants; but "*one of the Body Phyſicians to her Imperial Majeſty*," ſtands inexcuſable in promulgating ſuch wandering notions of ſubjects intimately connected with his own profeſſion.

I CAN readily grant, that in Ruſſia the diſeaſe is more fatal than in Britain; but yet when we reflect upon the wide and dreary extent of the Ruſſian Empire, the ſmall proportion of inhabitants, their imperfect communication and difficult intercourſe, and that many parts are rude and uncivilized; great

numbers there muſt be ſuppoſed to live and die without being viſited by variolous contagion. I am willing to make every conceſſion in favour of Baron Dimſdale; let Small-pox in Ruſſia be as inhuman as he chuſes, and armed with the moſt incredible ferocity; if one eighth or two millions of the inhabitants are annually deſtroyed by it, then in the ſhort ſpace of a ſingle year, all other diſeaſes ſweeping away the remaining ſeven parts, every human ſoul in the Czarina's dominions would be entirely exterminated, the country reduced to a deſart, and over-run with wild beaſts.

A QUESTION of infinite magnitude and importance to mankind, now remains to be diſcuſſed, whether by Inoculation in London and other great Cities at the private houſes of the Inhabitants, contagion is not more likely to be diſperſed, and upon the whole the community at large to be more injured than benefited by the practice?

LATELY this ſubject has been canvaſſed in printed publications by medical gentlemen of great profeſſional abilities. One ſide has recommended general Inoculation throughout Town and Country, and a Diſpenſary has been

been erected upon thoſe humane motives, in order to render the effects more extenſive. All the poor who chuſe to apply for themſelves or families are to be Inoculated gratis, and where the caſe is attended with any danger, they are to be furniſhed with medicines and medical advice at their own habitations.

THIS ſcheme and effort of benevolent humanity and diſintereſted patriotiſm, has been oppoſed by Baron Dimſdale, and unfortunately for the public with too much ſucceſs; the attempt is calumniated by him with conſiderable heat, and paſſionate zeal. Public appeal has been made. Baron Dimſdale has printed ſeveral pamphlets on the back of each other, to repreſent the general Inoculating inſtitution as "raſh, inconſiderate, and highly dangerous." He arraigns his medical antagoniſts with "urging artful untruths, "and notorious falſhoods; he accuſes them of "wanting common honeſty and humanity;" and in ſome of his lateſt pamphlets, he ſuggeſts as a ſimile in point, "that an action of da-"mages would lie againſt a perſon, who, "by Inoculating *horned cattle* for a conta-"gious diſeaſe, ſhould ſpread it in the neigh-"bourhood." We are to obſerve, that Ba-

ron Dimſdale's interdictions are " ſolely di-
" rected againſt Inoculating the poor, labo-
" rious, and middling claſſes of people at
" their own houſes," for in all his publica-
tions he allows that the " *rich and gentry may*
" *ſecure their families by timely Inoculation.*"
Indeed it is a principal part of his own prac-
tice in London.

I SHALL endeavour to ſtate, with equal candour, and with as much brevity as poſ-ſible, the arguments advanced by each of the diſputants. Of all the publications upon this controverſy, I ſhall exhibit to view but two, that of Baron Dimſdale, and another, the joint production of two very learned Phyſicians, Dr. Watkinſon, and Dr. Sims; the two gentlemen who firſt recommended a Diſpenſary, and who, together with ano-ther Phyſician of diſtinguiſhed abilities, Dr. Letſom, offered their ſervices without fee or reward, to render Inoculation more general and uſeful to London and to the nation.

BARON Dimſdale, the leading and ardent champion againſt general Inoculation in Lon-don, " at the houſes of the laborious poor,
" and middling trades people," reſts his op-poſition upon the following principles: I

give

give the abſtract and ſubſtance in his own words. I muſt alſo do the Baron the juſtice to ſay, that ſeemingly, he has deviſed, urged, and exhauſted every ſpecious argument on that ſide of the diſpute. On that account, I have ſingled him out, becauſe, in refuting his objections, I ſhall ſilence all the ordinary herd of writers, and opponents againſt the univerſality of Inoculation.

" THOUGH the loſs under Inoculation is " very inconſiderable, *almoſt the whole* of thoſe " that are Inoculated recovering, yet by " ſpreading the diſeaſe, a greater proportion " take it in the natural way: *more lives* are " now loſt in London than *before Inoculation* " *commenced*, and the community at large ſuſ- " tains a greater loſs: the practice therefore " is more *detrimental* than *beneficial* to ſoci- " ety. In the laſt four years preceding " 1776, the London Bills from Small-pox " aroſe at a medium to two thouſand, five " hundred and forty four: this increaſe is " truly alarming. The diſeaſe by general " Inoculation throughout London, ſpreads " by viſitors, ſtrangers, ſervants, waſher- " women, doctors and Inoculators; by " means of Hackney Coaches, in which the

" ſick are ſent out to take the air, or by " ſound perſons approaching them in the " ſtreets.

" The poor in London are miſerably " lodged; their habitations are in cloſe alleys, " courts, lanes, and old dirty houſes: they " are often in want of neceſſaries, even of " bedding. The Fathers and Mothers are " employed conſtantly in laborious occupa- " tions *abroad*, and cannot attend the Ino- " culated ſick; ſhould they neglect their oc- " cupations, food and neceſſaries would be " deficient, and the medicines and diet or- " dered by the phyſicians would not be re- " gularly complied with. The air in " their houſes is impure: they have neither " areas, gardens, nor *carriages* for the " convenience of ventilation, and taking " freſh air.

" Sailors and ſea-faring people, many " of whoſe lodgings are miſerable in the little " houſes bordering on the river, would be " liable to catch the diſtemper, and either to " fall ſick there without friends or aſſiſtants, " or perhaps being infected on ſhore, to car- " ry it to ſea in their contaminated cloaths, " and afterwards falling ſick without care or

" attendance,

" attendance, might ſpread the diſeaſe in fo-
" reign climates.

" COUNTRY people coming to town for
" markets, viſits, or pleaſure, would all be
" ſubject to the danger of infection. Perſons
" coming from the ſick to the general (Ino-
" culating) Diſpenſary, for medicines or ad-
" vice, by intermixing in the ſtreets, the *pub-*
" *lic* danger from their infected apparel
" would be *great* and inevitable: the whole
" neighbourhood would be expoſed, and in
" imminent danger, by having the Small-
" pox brought to their doors. The goſſip-
" ing diſpoſition of the poor will ſpread it
" further, and after the ſick recover ſallying
" forth in their infected cloaths, is certain
" to add to the miſchief. The children who
" are able to run about will intermingle in
" the ſtreets, immediately upon their recove-
" ry, with their play-fellows: the ſucceſs
" therefore derived from general Inoculation
" will be beneficial to a *few* only, but in-
" volve a great number of others in danger,
" to which they would otherwiſe be leſs
" expoſed."

As a remedy againſt all thoſe inconvenien-
cies and dangers from Inoculating the poor

and

and middling trades people at their own houſes, Baron Dimſdale addreſſes himſelf " to the legiſlature of Great-Britain, and to " the charitable contributions of the rich " and humane, to enlarge the Inoculating " Hoſpital at Pancras, adjoining to the city." This Hoſpital at preſent (if I am not miſinformed) makes only *one hundred beds*, and none are admitted under ſeven years of age.

" The *rich* (continues Baron Dimſdale) " availing themſelves by timely *Inoculation*, " *ſecure their families*, but the loſs falls " chiefly on the offspring of the inferior " trades people, and labouring poor. To en- " courage partial Inoculation amongſt them " would be only ſpreading the diſeaſe amongſt " their neighbours, and increaſing the evil. " In Country Towns, large Hoſpitals will " not be required: it will be *neceſſary only* to " obtain the *unanimous conſent* of all the in- " habitants of a town, diſtrict or pariſh to " be Inoculated at one and the ſame time: " for if ſome only are Inoculated, and others " excluded, the diſeaſe will ſpread through " the vicinage, and be fatal to many. In " London and other great cities, ſuch *general* " *conſent* of thoſe who have not undergone

" Small-

" Small-pox, cannot be had to ſubmit to " Inoculation." This the Baron juſtly conſiders as an impractible chimera, and never to be accompliſhed. " He adds, that before " Inſtitutions of this kind (the Inoculating " Diſpenſary) ſhould be tolerated, the le- " giſlature ought firſt to be conſulted."

THE danger of multiplying and ſpreading variolous infection by general Inoculation, is obviouſly the main pillar and prop, upon which Baron Dimſdale builds all his arguments and rhetorick. To obviate this ſuppoſitious danger the gentlemen who patronize general Inoculation amongſt the poor and laborious orders at their own houſes aſſert, " that the inſtances are ex- " tremely rare, where the diſeaſe is ſpread " from Inoculated perſons ſo as to excite " Small-pox in the natural way:" to prove this they appeal to facts and experience; they quote a number of eminent Authors, practical Inoculators, and other vouchers of reputation not only in Britain, but in different parts of Europe, all of whom expreſsly maintain, " *that from the Inoculated, few if any* " *catch the diſeaſe in the natural way.*" Mr. Holwel's obſervations in India, where Inoculation

lation is very general, corroborate this propoſition.

In reply to thoſe proofs, Baron Dimſdale, from his *own authority*, and inſtances which fell under his perſonal inſpection, contradicts their facts, and affirms, that infection may be communicated by Inoculated perſons, and excite the natural diſeaſe. The Circaſſians or Eaſt Indians would be good evidences to this point of diſpute. The gentlemen further ſay, and are confirmed by the teſtimonies of all experienced Authors, "that a "certain diſpoſition of the air (not well un-"derſtood) is neceſſary to give the contagion "of Small-pox activity, and to propagate "infection in the natural way. They ſay "too, that from an Inoculating Hoſpital, "the remedy propoſed by Baron Dimſdale, "children under ſeven years of age can "derive no advantage; and that in large "Hoſpitals the air is rather more impure "than in the meaneſt private houſes."

There never was in my opinion ſince the origin of phyſic, a medical controverſy agitated of more conſequence to mankind. It is not only a medical, but alſo a political, and a great national queſtion, and is well

entitled to the moſt ſerious attention of the legiſlature, and of the diſcerning public. Intellectual wars without number have been waged in Literature, Philoſophy, Medicine and Metaphyſics, from which few, except perhaps Bookſellers, have derived any active benefit. The preſent ſubject is not a matter of indifferent ſpeculation: abundant evidence has been laid before the reader of the immenſe carnage made by natural Small-pox, and of the inconſiderable number loſt by Inoculation; but if Baron Dimſdale's arguments are well founded, the advantages of this glorious diſcovery will be limited to a very ſmall remnant indeed of the community: nay, the Baron leaves it extremely doubtful and problematical, whether the univerſal advantages reſulting from Inoculation, are not more than counterbalanced by its diſadvantages—againſt its utility in cities his arguments (for I do not mean to inſult him by appealing to his daily practice) are peremptory and decided.

I SHALL endeavour to anſwer all Baron Dimſdale's objections one by one; in doing which, I truſt to prove, beyond contradiction, that his ideas of this ſubject are capri-

cious,

cious, ſuperficial and ſhort-ſighted, and that his favourite project (an Inoculating hoſpital) is crude and exceedingly faulty. All great cities in Europe are deeply intereſted in the deciſion of the utility, or injury from general Inoculation; the arguments which apply to London are equally valid in every metropolis and in leſſer towns. I proceed therefore to this ſolemn trial, upon which the reader is to ſit in judgment.

"THOUGH the loſs (ſays Baron Dimſdale) "under Inoculation is very inconſiderable, "almoſt the whole of thoſe that are Inocu-"lated recovering; yet by ſpreading the "diſeaſe a greater proportion take it in the "natural way, *more lives are now loſt in Lon-"don than before Inoculation commenced*, and "the community at large ſuſtains a greater "loſs; the practice therefore is more detri-"mental than beneficial to ſociety."

SUCH were the terrors held out to diſſuade every nation from encouraging Inoculation amongſt them, upon its firſt introduction from Turkey. If the argument is good for any thing, it muſt militate in every caſe againſt Inoculation in private houſes, particularly in London and other cities, and even in the

the country, whether rich, gentry, or poor; becauſe, according to Baron Dimſdale, the infection is in that way ſpread, and the public loſs is greater. Why therefore it may be aſked, does Baron Dimſdale labour all in his power to increaſe the diſperſion of variolous infection, and to injure the community at large, by Inoculating all rich perſons in London and its vicinity, who employ him? Do not his actions flatly contradict his oſtenſible cares for the public ſafety? I am hurt at being under the neceſſity of deſcending from the dignity of my ſubject, and bringing home an argument rather perſonal; but the reader will perceive it is entangled in the diſpute, it is extorted from me and inevitable. When Baron Dimſdale ſtood forth the medical Goliath againſt Inoculation in London, he ſhould have foreſeen that men would be confounded with ſuch glaring inconſiſtency upon being told, that few phyſicians Inoculated ſo many at private houſes in this city, and its neighbourhood, as himſelf.

" In the laſt four years preceding 1776, " the London Bills from Small-pox aroſe at a " medium to two thouſand, five hundred and " forty-four: *this increaſe is truly alarming.*"

Baron

Baron Dimſdale lays this increaſe at the door of general Inoculation diſſeminating variolous infection. As an effectual anſwer to this aſperſion, I refer the reader to the London Bills of mortality *four* years immediately preceding 1720. In 1715, Inoculation had been mentioned in a letter to the Royal Society; but for ſeveral years after, no perſons ſubmitted to the practice in London, nor in England. Now the deaths by Small-pox in theſe *four* years amount to eleven thouſand, ſeven hundred and forty-one, or nearly to three thouſand annually, before Inoculation commenced. Go ſtill further back into the Bills, and before Inoculation was heard of in England; in ſome years Small-pox deaths ſwell to two, and even to three thouſand: in 1710, they amount to three thouſand, one hundred and thirty-eight, 1686, to two thouſand, four hundred and ninety-ſix; 1681, to two thouſand, nine hundred and eighty-two; 1674, to two thouſand, five hundred and ſeven. In 1721, ſo cautious and fearful were they of Inoculation in London, that in that year experiment was made of its effects upon ſix condemned malefactors in Newgate, who by that means redeemed

deemed their lives. From 1722 to 1727, Dr. Jurin could collect but ſeven hundred and ſixty-four perſons Inoculated in all that interval, including London and other parts of England; yet notwithſtanding in twelve years only, from 1715 to 1728, Small-pox deaths in London amount to twenty-ſeven thouſand, three hundred and ſixty-ſeven; or nearly to two thouſand three hundred annually. Theſe facts ſurely are ſufficient to exonerate Inoculation from adding to variolous mortality in the metropolis.

Four years beſides is too ſhort a period to erect ſubſtantial concluſions upon: there is an ebb and flow in natural Small-pox as in all other diſeaſes, eſpecially of the febrile claſs, thoſe left behind in former years are often in the ſucceeding ſwept away. Epidemical and particularly contagious diſeaſes, cannot be expected to keep upon an annual equality. In ſome years of the London Bills the burials have been double the births; here is more real reaſon for *alarm:* nor does Small-pox keep pace with the general mortality: in 1741, the annual burials of the metropolis were thirty-two thouſand, one hundred and

ſixty-nine, and in this number Small-pox but one thouſand, nine hundred and ſeventy-ſeven. In many other diſeaſes, both acute and chronic, the mortality of each varies in ſome degree annually: it cannot be expected to be quite ſo regular as the motions of time, or the revolutions of the planets.

London inhabitants fluctuate, which may occaſion ſome difference: beſides, in the laſt *twenty* years the total annual mortality has conſiderably decreaſed, and this is one reaſon why Small-pox appear in the four years picked out by Baron Dimſdale *comparatively* greater than formerly, amounting, as he ſays, to one eighth of the deaths. From 1720 to 1759, the proportion of deaths by Small-pox to all other annual deaths in London, were as 1 to 11, 12 and 13; and forty years is a better foundation to build upon than four. One to 13 and 14 is alſo the proportion of Small-pox mortality in Paris.

Again, when two thouſand, five hundred and forty-four have died in one year by Small-pox in London, it is demonſtrable that the greateſt number of the ſick muſt have been ſeized with the *natural* Infection; for out of *one million* Inoculated, rating the blanks at

one

one of five hundred, agreeable to the modern and broadeſt calculation, ſo many deaths would not have happened. Now attend to the deduction from this plain propoſition. The annual deaths by Small-pox in London being two thouſand, five hundred and forty-four, and one out of ſix dying of the natural diſeaſe, which is the uſual average in Britain; in this caſe fifteen thouſand, two hundred and ſixty-four, or near to that amount, underwent the diſtemper each year, in the natural way in this metropolis. This is nearly equal to the annual births in the ſame regiſter. How many more were Inoculated, I cannot pretend to alledge. Such a multitude of variolous ſick could not poſſibly be confined to the new annual recruits from the country; and as the majority of thoſe emigrants are advanced near the age of puberty, or have paſſed that period, we may infer, that numbers of them have already eſcaped through the perils of Small-pox. Therefore, where fifteen thouſand, or even twelve thouſand have in one year been infected with natural Small-pox, without adding the Inoculated; is there not a copious magazine of contagion in London to ſpread the diſ-

eaſe? During one hundred and fifty years that is ſince the diſeaſes were firſt marked in the Bills, London has never been *one* year free from variolous infection. Baron Dimſdale, in his anxious ſolicitude and alarming apprehenſions leaſt the poor Inoculated at their own houſes ſhould diſperſe the infection, ſeems entirely to overlook thoſe fifteen thouſand perſons labouring annually under natural Small-pox; their families, friends, and viſitors probably amount to treble or quadruple this number: here is a large army to propagate variolous infection, and which cannot be ſmuggled into a narrow corner, or penn'd up in a few ſtreets.

Baron Dimſdale ſpeaks of Small-pox in London, as if the infection was either impriſoned in the variolous Hoſpital; or as if he carried the whole poiſon in his waiſtcoat pocket, encloſed in a ſmall box or vial, and enveloped in a little cotton or thread for the uſe of private Inoculation amongſt certain ranks of the inhabitants: cannot the contagion find any exit from the houſe of a rich man amongſt the reſt of the community? Or will any rational perſon conſider variolous infection in this city in the ſame light as an

Egyp-

Egyptian plague juſt landed, and confined to a ſingle bale of goods? In fact the numbers required to be Inoculated in London, would not conſiderably exceed thoſe who now undergo the diſeaſe in the natural way; and when we reflect upon the ſmall proportion of puſtules in the Inoculated compared with the natural diſeaſe, ſo far from variolous infection being multiplied in abſolute and groſs quantity by general Inoculation, it would be greatly diminiſhed.

CERTAINLY there is every year in London, abundant variolous infection to diffuſe the diſeaſe over the univerſe, provided the communication was open, and the intercourſe general: the enemy is in every corner of the city, and leaves behind melancholy marks of his viſits; at leaſt no obſtacle prevents the infection from being daily ſcattered through the metropolis amongſt ſound perſons, by all the luxuriant train of carriers expatiated upon, and painted with ſuch ſtrong poetical colouring by Baron Dimſdale: " by " viſitors, ſtrangers, doctors, inoculators, ſer- " vants, waſher-women, by ſervants in the " ſtreets in ſearch of doctors or medicines, or " employed in other neceſſary avocations, by

" hackney coaches in which children take " the air, by children on their recovery mix- " ing with their play-fellows," &c. The danger in this caſe is much greater to the public, from the infection of natural Small-pox being diſperſed, than if it had been emitted from Inoculated.

" The poor in London are miſerably " lodged; their habitations are in cloſe al- " leys, courts, lanes, and in old dirty houſes; " they are often in want of neceſſaries, even " of bedding; the father and mother are " employed conſtantly in laborious occupa- " tions abroad, and cannot attend the ſick: " ſhould they neglect their occupations, food " and neceſſaries would be deficient."

To this I reply, that few in London of the laborious claſſes are ſo poor as to be totally deſtitute of the neceſſaries of life and bedding. I mean, that a very ſmall number die in the year, immediately at leaſt, from that cauſe. In my fourth table of the London Bills during fifteen years, the number ſtarved amount only to 53, and in the fifth table, an equal period, to 57.

By this obſervation, I have no intention to inſinuate that the laborious poor live ſo com-

fortably as ſhould be wiſhed. It would give me ſincere pleaſure, if every man in England could ſit down daily to roaſt beef and a tankard of ale, but my wiſhes are of no conſequence. Luxury and neceſſaries likewiſe in different ranks of life have very different ſignifications; nor do the ſick of young children, ſuch as thoſe propoſed to be Inoculated, require any expenſive food; their diet in fevers, and in health, is ſimple and not coſtly.

The parents cannot both be employed abroad in labour, if they have any young children; the mother muſt remain at home to nurſe, and to cook victuals: neither is it probable that they would be deſtitute of neceſſaries and food, though once in a child's life-time the mother gives it conſtant attendance during the illneſs of Small-pox. After one week, or at moſt a fortnight, all danger from Inoculated Small-pox will be over. If the Baron's argument was of any real force, " poor women, and middling trades people's wives," who annually bring forth children, and are uſually confined to bed, or at leaſt prevented from doing any laborious work for three weeks or a month ſhould all be ſtarved,

by lying in at their own houſes; it would fruſtrate the firſt law of nature, and a principal intention of ſociety. Beſides, when two or three children of a family are Inoculated at one time, all danger and expence will be over in two or three weeks; but in the natural Small-pox the family generally fall ill alternately, and if numerous, linger ſome months in affliction: here the apprehenſions of ſtarving are much more ſerious and better founded.

" MEDICINES and diet ordered by the " phyſicians would not be regularly com- " plied with: the air in their houſes is im- " pure: they have neither areas, gardens, " nor carriages for the convenience of ven- " tilation, and taking the air."

VERY few of the poor can afford to conſult phyſicians, thoſe only excepted, whom public Diſpenſaries, or private humanity may ſend to their aid. A phyſician's fees, unleſs they attended as Dr. Sims and Watkinſon generouſly propoſe, gratis, would make a compleat famine in a poor man's houſe for ſeveral months. Great delicacies, and a heap of medicines are very ſeldom neceſſary in Inoculated

oculated Small-pox. In Circaſſia the women are the phyſicians and Inoculators.

With reſpect alſo to the impurity of the air in their houſes, and their being deſtitute of gardens and open areas, ſo are ſeveral hoſpitals in this city; and I apprehend, that the poor in ſickneſs would prefer their own humble cabins, or as the Baron is pleaſed to term them, dirty houſes, unleſs the diſeaſe ſhould happen to be lingering and protracted to a great length of time, or in ſudden accidents which require expert ſurgical aſſiſtance. The modern public Diſpenſaries which humanely ſupply the poor with medicines and advice, and when neceſſary, attendance at their own habitations, are much more cordially reſorted to, than large hoſpitals. Poor perſons may not poſſeſs the means of purchaſing all the neceſſaries and delicacies ſuited to their weak and ſick appetites, yet they will be more contented to remain in their domeſtic cells with their familes and friends, than to be placed under the care of old callous nurſes, expoſed in the open wards of an hoſpital, diſguſted often with offenſive ſights, perhaps loathſome diſeaſes, diſturbed by the groans of twenty other ſick in the ſame apartment,

partment, their minds too frequently alarmed, dejected, and ſhocked at the gloomy ſpectacles and horrid aſſaſſinations of death. If Inoculation is to be with-held in London from the poor until they get "gardens, and areas to their houſes, and *coaches* "to take the air," they may wait to the day of judgment, for the completion of this extraordinary metamorphoſis.

CUSTOM has powerful effects both in air, food, and manner of life, when perſons are advanced a ſhort way in years. At all events, bad impure air will be more hurtful in natural and malignant Small-pox, than in the mild artificial diſeaſe. The impurity of London air is alſo equally ſtrong through infancy; particularly until children reach ſeven years of age. Some thouſands before this period are annually poiſoned by the London atmoſphere, who would have ſurvived, had they been nurſed in the country with equal tenderneſs and attention. London children after arriving at that ſtage, are tolerably ſeaſoned and habituated to their native element. This is obvious by conſulting all the tables of comparative mortality at different ages, in the ſecond chapter of this work.

"SAILORS

" SAILORS and ſea-faring people, many of " whoſe lodgings are miſerable, in the little " houſes bordering on the river, would be " liable to catch the diſtemper, and either to " fall ſick there without friends or aſſiſtants, " or perhaps being infected on ſhore, to " carry it to ſea in their contaminated " cloaths; and afterwards falling ſick with- " out care or attendance, might ſpread the " diſeaſe in foreign climates."

SAILORS are not the pooreſt claſs of people; their owners and captains will always be ready to ſupply them with money in this ſhort ſickneſs, and to provide them with nurſes and medical advice: beſides their lodgings on the ſide of the river would have one excellent advantage in being airy, and conſtantly ventilated by the tide. As to the falling ſick afterwards at ſea, the danger is rather imaginary; I know of no inſtance, (and I have read not a little upon that ſubject) ſince the introduction of Inoculation into this country, where either a Britiſh army, or grand fleet, ſuffered any conſiderable mortality by Small-pox, though that diſeaſe has broke out in a virulent degree, amongſt

a ſmall

a ſmall number in camps, and on board ſhips of war.

Pringle, Lind, and Monro, three ſtandard medical authors upon army and navy diſeaſes, never mention Small-pox as one of the principal epidemic cauſes of mortality; and we may preſume, it could not have been kept a profound ſecret from gentlemen of their knowledge and penetration. Lind gives a catalogue of diſeaſes, (not deaths) in the naval hoſpital at Portſmouth, during two years: out of five thouſand, ſeven hundred and forty-three ſick ſeamen, only fifty-three are ſet down as infected with Small-pox. To ſome of the North American troops, in which country great prejudices ſtill prevail againſt Inoculation, and until lately the contagion was guarded againſt as a plague; this diſeaſe has during war, proved more fatal. It is another extraordinary argument to expreſs ſuch fears about ſailors carrying the diſeaſe to foreign climates: what kingdom or climate is free from variolous contagion? The Baron is under great anxiety leſt a ſailor, or a merchant veſſel ſhould tranſport, and ſpread the diſeaſe in foreign climates; but in London, where twelve or fifteen thouſand have annu-

annually been ill of the natural infection, he talks of the public danger as great and inevitable, ſhould the laborious and induſtrious claſs be Inoculated at their own houſes.

" COUNTRY people coming to town for " markets, viſits, or pleaſure, would all be " ſubject to the ſame danger: perſons coming from the ſick to the general Diſpenſary for medicines or advice, by intermixing in the ſtreets, the public danger from " their infected apparel would be great and " inevitable: the whole neighbourhood would " be expoſed and in imminent danger by " having the diſeaſe brought to their doors."

COUNTRY people coming to London will undoubtedly be more expoſed to contagion; but even in country villages, I imagine that very few are grown up to the age of twenty, who either have not had the Small-pox, or have not been ſeveral times expoſed within the ſphere of variolous effluvia: but if Inoculation was univerſal in the early parts of life, all danger of ſpreading the diſeaſe to this deſcription of perſons, and to every other denomination arrived at maturity, would ſubſide: it is becauſe Inoculation is yet partial, that the public ſafety is in danger.

If there is any meaning in Baron Dimſdale's terrible apprehenſions, "*that the public danger would be great and inevitable*," &c. it implies that by general Inoculation at private houſes, London would be in imminent danger of being ravaged and depopulated as by a true peſtilence, in which one, ſometimes two thouſand have periſhed in a ſingle day, or in a week: the interpretation may admit of a milder conſtruction, but yet ſomething analogous, and poſſibly inferior in virulence. This alarm I believe is advanced without mature conſideration. I build my opinion upon the two following ſolid reaſons: Small-pox in the courſe of the laſt hundred years, has deſtroyed at a medium in London, about two thouſand annually; conſequently at leaſt ſix times two or twelve thouſand (or probably more) were every year afflicted with the natural diſeaſe, and a ſmall number comparatively remained behind untouched; many of the new ſettlers muſt alſo have paſſed over this danger before their arrival in the capital: my ſecond reaſon is, that in the ſpace of one hundred and fifty years, in all which time London has never been one year exempt from Small-pox, the annual deaths

by

by this diſeaſe have not amounted to four thouſand, although during ſixty years of this time Inoculation has been known.

Mr. Condamine and other writers remark, that at Rome, in the year 1754, a highly mortal and malignant Small-pox raged, and that four thouſand died of the diſeaſe: 1 out of 3 are ſaid to have been the victims of this malign infection, and of courſe about twelve thouſand underwent the diſeaſe. The total annual deaths at Rome then, and for many years after ſtand at five, ſix, and ſeven thouſand: (Mr. Condamine has underrated the burials.) In London, though *four* or *five* times more populous than Rome, the mortality by Small-pox, within the Bills, never has reached four thouſand in one year. At the Cape of Good Hope, and alſo in Brazil, Mexico, Peru, Paraguay, and in a few diſtricts of the northern parts of America, Small-pox has tyrannized with the virulence of a true plague, becauſe none of the inhabitants were ſeaſoned, or had paſſed through that diſeaſe; but in the Britiſh metropolis, and other great cities of Europe, the caſe is totally different

" The goſſiping diſpoſition of the poor " will ſpread it further, and after the ſick " recover, ſallying forth in their infected " cloaths is certain to add to the miſchief: " the children who are able to run about " will intermix in the ſtreets immediately " upon their recovery with their play-fellows: " the ſucceſs therefore derived from general " Inoculation would be beneficial to a *few* " only, but involve a great number of others " in danger which they would otherwiſe be " leſs expoſed to."

Dr. Watkinſon and Dr. Sims, I apprehend, intended that general Inoculation in London ſhould take place a ſhort time before children begin to cut teeth, provided they are healthy and ſtrong; or immediately after cutting the firſt ſett, between two, and at the utmoſt four years of age; or even during the interval of teething, if not attended with any extraordinary pain or indiſpoſition of the child. The younger claſs of theſe perſons will not be liable to ſpread the diſeaſe in London ſtreets amongſt their play-fellows. Children carried to the Diſpenſary to be Inoculated, could not poſſibly convey the diſtemper to others in the ſtreets,

nor

nor until after the eruption, which will be from nine to eleven or twelve days after the infection is engrafted: beſides, children recovering from the natural Small-pox, ſally forth, and intermix with their play-fellows, and diſperſe the infection in all degrees of virulence: there is no law that I know for their being impriſoned during forty days after their recovery, as is frequently done in caſes of plague. " That *general* Inocula-
" tion ſhould be beneficial to a *few* only, and
" involve a great number of others in dan-
" ger, to which they would otherwiſe be leſs
" expoſed, is to me a paradox." What claſs or proportion of the inhabitants of a kingdom would be involved in danger, if Inoculation was general in the early parts of life? Where we are conſtantly enveloped in variolous contagion, ſuch arguments are futile and abſurd. In great cities no perſons can reaſonably flatter themſelves with hopes of eſcaping the diſeaſe: the voracious foe inceſſantly keeps poſſeſſion, and ſooner or later is ſure to prowl through every ſtreet, lane and alley.

BARON Dimſdale next " addreſſes him-
" ſelf to the legiſlature, and to the affluent

" and charitable to enlarge the Inoculat-
" ing Hoſpital." This is the public and only Aſylum which he aſſigns to the poor and middling trades-people to ſecure them from the deplorable deſolation made by Small-pox. Paris has great reaſon to curſe its enormous hoſpital, the Hotel Dieu, that ſeminary of corruption and diſeaſe. Another unanſwerable objection to a variolous hoſpital is, that under ſeven years of age no children are admitted, before which period Small-pox will have made its principal depredations amongſt the native progeny of London. Should infants at the breaſt, or under three years old be admitted, the mothers or nurſes muſt alſo be taken in; the young families at home would be then deſerted during three weeks or a month, and the expences of the hoſpital multiplied. Very few mothers of the laborious inhabitants and middling trades-people, would conſent to entruſt their young children to the care of ſtrange nurſes, at leaſt without being permitted to viſit them in ſickneſs, and by this means the diſeaſe might be conveyed in their infected apparel to paſſengers in the ſtreets, to goſſiping neighbours, &c. nor would

would one fourth of this induſtrious deſcription, ſubmit to have their young offſpring crowded into an Inoculating Hoſpital, to be buried in a hot bed of variolous infection and diſeaſed exhalations.

" LARGE hoſpitals will not be required in " country towns: it will *be neceſſary only* to " obtain the unanimous conſent of all the " inhabitants of a town, pariſh, or diſtrict, " to be Inoculated at one and the ſame time; " for if ſome only are Inoculated, and others " excluded, the diſeaſe will ſpread through " the vicinage, and be fatal to many."

THIS *only* ſeems to ſignify, that it is an extremely eaſy matter in country towns, or large diſtricts of open country, to obtain the unanimous conſent of all the inhabitants to be Inoculated at one and the ſame point of time. A conſiderable number poſſibly would permit the infection to be conveyed to their children; many grown up perſons who had hitherto eſcaped, would fly away; others from various ſcruples and prejudices would refuſe their aſſent; and for my own part, ſo far from thinking the propoſal would readily and unanimouſly, without many " veto's," be complied with at one and the ſame time,

that I ſhould expect with as much facility, by turning a preaching miſſionary, to convert the nation to one religion. Baron Dimſdale boaſts of his having in this way ſucceſsfully Inoculated two towns in the neighbourhood of London, Hertford and Ware; but this is a reproach to his own pretended humanity, and a flat contradiction to his ſyſtem: for what could prevent the infection from being ſpread amongſt the adjacent villages, and to be diſperſed by the numerous daily paſſengers, ſtage coaches and travellers through London, and through every country town of England.

" The wealthy and rich availing themſelves of *timely Inoculation ſecure their families*; but the loſs falls chiefly on the offspring of inferior trades-people, and the labouring poor: to encourage partial Inoculation amongſt *them*, would be only ſpreading the diſeaſe and increaſing the evil."

In the name of common ſenſe and humanity, why are not the *poor to ſecure their families by timely Inoculation* equally with the rich? why is Baron Dimſdale ſo active in Inoculating the latter in London, in rendering

Inocu-

Inoculation *partial* and ſpreading the evil. Are there no " goſſipers, viſitors, doctors " and attendants to diſperſe the infection " from the houſes of rich perſons?" Partial Inoculation, the Baron exclaims is raſh, inconſiderate; it endangers the public ſafety. Good God, that men can be ſo blind and partial to their own actions, and that they can ſuffer either a bigotted attachment to a preconceived hypotheſis, ſelfiſh intereſt, or ſtubborn pride, ſo groſsly to diſtort their judgment. If the Baron is ſerious in conſidering *partial* Inoculation as injurious to the community, it is highly criminal in him to be one of the moſt active inſtruments in their deſtruction. In a matter of ſo great moment, in which the deareſt concerns of mankind are linked, I feel myſelf warmed and provoked to ſtigmatize ſuch double dealing with exemplatory reprehenſion.

Whilst the opulent claſſes in London are permitted to practiſe Inoculation, others will imitate them. It is natural for every parent, rich or poor, it is their duty to aim at preſerving the lives, and even the beauty of their children. I can ſee no reaſon why poor perſons or middling trades people ſhould

hazard the lives of a young family, becauſe their neighbour has ſcruples againſt Inoculation, and obſtinately perſiſts to reject that certain means of ſecurity. So long as Inoculation is confined to a few, ſo muſt its benefits: we mean it to be univerſal. The Baron in the cloſe of this laſt paragraph, where he raves againſt *partial Inoculation*, is inconſiſtent with himſelf, and without being ſenſible of the contradiction, is evidently pleading the cauſe of general Inoculation.

WHERE the inhabitants of country towns are all Inoculated at one and the ſame time, unqueſtionably the neighbourhood and travellers will be leſs expoſed to danger, and the diſeaſe may not return back again to that vicinage until ſeveral years have elapſed; but in London, we are never without an immenſe magazine of poiſon from natural and Inoculated Small-pox; a very ſmall ſpark of which is ſufficient to kindle up the diſeaſe, and to multiply itſelf in a favourable diſpoſition of the air. The caſe mentioned by Baron Dimſdale, but copied from Dr. Mead, is one of many other proofs to this effect, and is as follows.

" IN 1718, two or three children had " caught the infection of Small-pox in the

" Eaſt-

" Eaſt-Indies, and on the voyage were taken
" ill: the diſeaſe was violent: the linen
" which they wore in ſickneſs was put into
" a box unwaſhed, and landed at the Cape
" of Good Hope, where it was ſent on
" ſhore to be waſhed by the natives. On
" opening the box, the infection was com-
" municated; Small-pox broke out, ſpread-
" ing into the country, and carried off vaſt
" numbers of the inhabitants, ſo that the
" country was almoſt depopulated."

It was mentioned in a former part of this work, that a ſingle negro ſlave firſt carried variolous infection amongſt the Mexicans, who had until then been ſtrangers to the diſeaſe, and by which incredible multitudes of the inhabitants were exterminated. In India, I ſaid, upon Mr. Holwell's authority, that the matter of Inoculation has been preſerved ſeven years entangled in cotton, and cloſe ſtopped up from the external air; after that interval of time it will convey the infection by the artificial mode. The maxim of Celſus, that medicine is a circle, often ſtrikes me very forcibly. To take a comprehenſive ſurvey of this particular part of the ſubject, we ſhould examine the nature of

different ſpecific contagions, of peſtilential and jail infection, and of variolous poiſon, the length of time they can be preſerved in woollen or porous materials, and the remote diſtance to which they have ſometimes in this way been tranſported.

Take what precautions we can in London to prevent communication of variolous contagion, it will be impoſſible and nugatory, where there is ſuch a conſtant ſtock of infection; where twelve or fifteen thouſand are annually ill of natural Small-pox, which has been the caſe one hundred years without interruption: add to them their families, friends and viſitors, amounting in all to treble or quadruple the number of ſick, and to whoſe clothes or perſons infection may adhere, what fears ſhould London inhabitants have of general Inoculation? To prevent variolous contagion in Dr. Dimſdale's theoretical plan from being tranſported through London, the inhabitants ſhould have their doors barricadoed, old clothes men, retailers of rags, and thoſe who hawk about old woollen apparel through the ſtreets, ſhould all be hanged, or ſent to the gallies; Inoculators and doctors ſhould ſuffer the ſame puniſhment,

niſhment, or be avoided as a peſtilence, and, like Cain, ſome diſtinguiſhing mark ſhould be ſet upon them; ſtage coaches and poſt-chaiſes filled with paſſengers that go out and return every day, from all the parts of the kingdom, ſhould be put a ſtop to, none ſhould enter, nor go out of town without certificates of health; goods and merchandize ſhould all be ſubjected to inſpecting officers, and detained, and guards ſhould be poſted at every avenue. This would be treating Small-pox ſomewhat ſimilar to the plague, but it would eſtabliſh a medical tyranny more rigorous and horrible than the religious inquiſition of Spain; every office of ſociety would meet with intolerable interruption, the London inhabitants would drag through a miſerable life of ſlavery, under everlaſting terror and quarantine. At preſent ten thouſand avenues are daily left open to the mercileſs invader, and I can ſee no certain ſecurity or retreat in this city, but to render ourſelves invulnerable by early, and univerſal Inoculation.

" BEFORE inſtitutions of this kind (the " Inoculating Diſpenſary) are tolerated, the " legiſlature ought firſt to be conſulted."

I moſt

I moſt cordially join iſſue with Baron Dimſdale, in imploring the attention of the legiſlature to the ſubject of Inoculation. It is not many years ago, ſince a contagious diſorder amongſt the horned cattle was recommended from the throne, as a ſubject ſufficiently important for their immediate deliberation; nor do I introduce this compariſon in a ludicrous light: but every man not deaf and callous to reaſon and feeling, muſt view the ruinous devaſtation by Small-pox amongſt his fellow-creatures, as infinitely more terrible in its conſequences. The publick at large, and the great national council notwithſtanding ſeem hitherto to have dozed over Inoculation, and to have looked on at the daily carnage made by Small-pox with ſtupid inſenſibility and indifference.

Baron Dimſdale has couched another meaning under this invocation to parliament: he wiſhes merely to cruſh thoſe who would diſtribute the benefits of Inoculation to every claſs of the people. But no legiſlature that is not arbitrary and unjuſt, can in this caſe preſume to make one rule for themſelves, and another for the poor and middling trades-people; at leaſt without a

flagrant

flagrant encroachment on the rights of mankind, they cannot interfere to prevent them from Inoculating their children, if it is permitted to the higher and opulent ranks in London.

I CAN perceive but three or four ways, in which the legiſlature could poſſibly intermeddle in laying any *reſtraint*, or enacting regulations reſpecting Inoculation. One way is, either to prohibit the practice in London amongſt the rich and poor, and to tolerate it in the country alone, or in Small-pox lazarettos built for that uſe at ſome diſtance from the capital. In this mode, the opulent claſs retiring to their country-houſes, would diſperſe infection according to Baron Dimſdale's ſyſtem over the kingdom, and in what inconſiderable degree Small-pox lazarettos could ſecure the laborious inhabitants of London from danger, I ſhall ſoon demonſtrate. Another way, in which the legiſlature might interpoſe their authority is, by ordaining that general Inoculation in London ſhould only be performed in certain ſeaſons of the year, in imitation of the Bramins in India, during two or three months, that afterwards all afflicted with this diſeaſe, rich

and

and poor, ſhould be removed and immured as in caſes of plague, their infected goods and apparel waſhed, and purified by fire and ſmoak. Baniſhing Inoculation alone from the capital, or from the kingdom, would not baniſh Small-pox; we have many centuries uninterrupted experience of the contrary. The legiſlature might alſo enact a law, to oblige ſeparate pariſhes to defray the expences of Inoculating the indigent poor at their own houſes, and in country towns, and open diſtricts it might be practiſed every two or three years, or even ſooner, ſhould natural Small-pox break out in the neighbourhood. Of all theſe different modes, the practice of the Bramins, and ſupporting the indigent poor during Inoculation, are alone entitled to any ſerious conſideration.

HAVING now with patience replied to all Baron Dimſdale's objections, I have yet in reſerve, facts and mathematical proofs, which I conceive muſt alone overſet the whole ſuperſtructure of the Baron's argumentative oppoſition, to general Inoculation at the private dwellings of the poor and middling tradespeople in this city. I deny that an Inoculating Hoſpital is the effectual means to leſſen the

publick

publick danger and mortality in London, from natural Small-pox: it is a paltry temporizing palliative, totally inadequate to the magnitude of the evil: or if the Baron will indulge me to uſe a few of his own ſofteſt and emphatical phraſes, "it is raſh, and inconſiderate, it would be beneficial to a "*few* only, and involve a great number of "others in danger." The reader will be ſo indulgent to favour me here with his particular attention. I ſhall take up the matter in the moſt favourable point of view for Baron Dimſdale. Suppoſe therefore that by the bounty of the legiſlature and private contributions, an Inoculating Hoſpital large, and endowed with every neceſſary, is erected in this city, that Baron Dimſdale is enthroned ſupreme ſuperintendant and dictator, that upon his ſingle authority, all the poor and middling trades-people have refrained from Inoculating their families until they are *five* years old, when as many as ſurvive ſhall be taken into this lazaretto: how many lives now from *five* to *twenty* years of age, could in this way be annually ſaved to the metropolis? This Baron Dimſdale muſt allow to be liberal; it is giving in two important additional

ditional years of infancy from five to ſeven, and ſtating the argument as ſtrong as poſſible againſt myſelf. Pleaſe to attend to the following table of comparative mortality, at all ages in London during fifteen years, by Dr. Short: I could have added another, and to the ſame effect, of thirty years.

Dr. Short's table from January the 1ſt 1728 to 1743, a period of 15 years, died by the London bills at all ages, taken at an annual medium, in the following proportions:

Years of Age		Died.
Under 2	——	9910
from 2 to 5	——	2411
5—10	——	980
10—20	——	851
20—30	——	2060
30—40	——	2471
40—50	——	2510
50—60	——	2231
60—70	——	1675
70—80	——	1200
80—90	——	634
90—100	——	117
Total annual medium of deaths in this period		27058

The

The annual medium of deaths in Short's bill were much greater than at preſent, amounting in all to upwards of twenty-ſeven thouſand; out of which number more than twelve thouſand died annually under five years of age, but from *five* to *twenty* in the ſame time, not *nineteen hundred*, including every death and mortal diſeaſe. In this caſe, following even Baron Dimſdale's overcharged calculation, if one *eighth* died of Small-pox out of nineteen hundred, then in London from five to twenty years of age there would die annually, even of the natural Small-pox, but about two hundred and forty.

Even this ſmall decreaſe is overrated, for of late years the total annual deaths in London are, (it is not neceſſary to be exact) we ſhall ſay twenty-two thouſand; of which number, from five to twenty, about 14 or 15 hundred die: one *eighth* of 15 hundred deducted for Small-pox, makes not quite two hundred deaths in London, in this long interval of life of the natural diſeaſe. One *eighth* I remarked was too large a proportion for Small-pox; it was formed upon four years only of the bills, ſelected by Baron Dimſdale; one tenth or twelfth

was the average during forty years. This therefore ſtill detracts from the inconſiderable number of Small-pox deaths in this ſtage of life, from *five* to *twenty*. That the Inoculating Hoſpital had no effect whatever in diminiſhing the proportion of deaths in this fifteen years period of Short's bill is evident, becauſe that hoſpital was not erected until 1746. Another ſubtraction muſt alſo be made for ſeveral of the new ſettlers, viſitors and ſtrangers, who, under twenty, no doubt die in London of Small-pox.

I DO not wiſh to ſubſtitute the leaſt conjecture in any part of the above propoſition; nor do I venture poſitively to aſſert, that Small-pox will bear an exact ratio of one eighth or twelfth to all other diſeaſes in the fifteen years, from five to twenty: ſure I am, that no perſon in his ſenſes will pretend to alledge, that all who die in London in this interval of life, periſh by Small-pox alone; and were we to admit ſuch a ridiculous ſuppoſition, their entire numbers are greatly inferior to various mortality. In fact, without adding a large portion of Small-pox deaths, we cannot poſſibly by all the other

diſ-

diſeaſes commonly incident to young children, account for the mortality under five years of age in London. Perſons born in the Metropolis, who have continued from birth to *twenty*, to reſiſt the impreſſions of variolous infection, though encircled daily in this poiſon, will not in all probability at the latter age enter into an Inoculating Hoſpital: their numbers as I have already repreſented, cannot be very conſiderable. Thoſe more ſtricken in years, and the aged, who have alſo eſcaped, will truſt as uſual to Providence.

None, ſays Baron Dimſdale, ſhould be Inoculated in London and other great cities, at the private houſes of the poor, laborious and middling trades-people; as many of their children as have waded through danger ſeven years, are to be received into an Inoculating Hoſpital: in country towns and open diſtricts too, all muſt conſent at one and the ſame time to receive the infection, otherwiſe it will be ſpread through the neighbourhood, do infinite miſchief, and ſhould not be attempted. So that upon the whole, as the inhabitants of cities and towns, are in proportion to thoſe in the country, as one to three and an half, and Inoculation in both

clogged with ſo many difficulties, interdictions and impracticabilities, that by Inoculating even country villages, there is imminent riſk of ſpreading the diſeaſe, and propagating the natural infection in the neighbourhood, that at private houſes in cities, it is tolerated only to a handful of the rich and affluent; I appeal to the underſtanding of ſenſible and impartial men, whether Inoculation is not effectually reſtricted and fettered from operating as a great national benefit or diminution of mortality, and whether thouſands are not wantonly doomed to deſtruction, and puſhed headlong down a precipice?

DAVENANT'S eſtimation, rated the houſes in England and Wales at one million, three hundred thouſand, near the beginning of the preſent century: the cottages then were five hundred thouſand: now they are both greatly decreaſed in number. We have probably at this time, a more plentiful proportion of rich and opulent inhabitants in this iſland, than any other kingdom of Europe. In 1777, the houſes that paid for ſeven windows, and conſequently the window tax, are rated, by Dr. Price, at one fourth of the others. Even in this country we muſt ſee

that the laborious and middling trades-people, make up the great hive of the nation. All their families in London are to be incarcerated during Inoculation, by Baron Dimſdale's orders, or to be debarred its advantages. If poverty in this capital is made a mighty objection againſt Inoculation at private houſes, it will be much ſtronger at Paris, where one third of the inhabitants die annually in their public hoſpitals: it would damn not only Inoculation, but alſo propagation throughout all the lower and laborious ranks in Scotland and Ireland, numbers of whoſe miſerable peaſantry are condemned to ſubſiſt during a great part of the year, principally upon oatmeal-gruel, or potatoes and ſalt.

To a ſmall number of indigent perſons and their children, exceeding ſeven years of age; to a few ſtrangers deſtitute of money and friends, who may happen to be ſeized in London with the natural Small-pox, a variolous hoſpital will during their ſickneſs, prove a uſeful Aſylum. Of thoſe likewiſe who are Inoculated in that receptacle, the blanks and prizes will be in the ordinary proportion; but as a national ſaving from *five*, and much

leſs from *ſeven* to *twenty* years of age, cannot amount to above one, or at the utmoſt, two hundred annually. What proportion of the new annual ſettlers have had the Small-pox, and how many are ſo poor as to make it neceſſary for them to enter into an hoſpital, are equally uncertain. If the whole had come to London without previouſly undergoing the Small-pox, it would not for that reaſon be incumbent on the London inhabitants to neglect the ſafety of their own families, leſt the new ſettlers might catch the diſeaſe from Inoculated infection.

Dr. Price, in his Treatiſe on the Cauſes of Depopulation in Cities, thinks, that a great number of the new emigrants are cut off by the foul air, vices, and debaucheries of London; he ſays nothing of Small-pox. I am induced by various conſiderations to believe, that whatever ſhare of Small-pox mortality takes place in London amongſt perſons turned of twenty years of age, is almoſt ſolely confined to the new annual ſettlers or recruits, who are neceſſary to repair the waſte of London, and the majority of whom arrive in the capital from twenty to forty years of age. Call this annual ſupply 6000; imagine

gine that one third of them, or 2000, are not ſeaſoned, but that they are aſſailed every year by the natural Small-pox; even in this caſe the annual decrement, ſtating it at one of ſix, will not exceed 320. This allowance however, I conceive is too large, and for two reaſons: firſt, becauſe a conſiderable number of the new recruits, ſervants, apprentices, and ſo forth, are under twenty years of age, and will fall into that ſmall claſs of thoſe who die under twenty: ſecondly, becauſe not more probably than one fourth inſtead of one third of the annual ſettlers, eſpecially of thoſe arrived at maturity, are oppugnable by variolous infection.

If London, by births and recruits, is ſuppoſed to require an annual ſupply of twenty-nine thouſand to repair the annual loſs by deaths, and if all thoſe were Inoculated each year, then according to the old calculation of 1 to 100, 290 would be the decreaſe by Small-pox; but by the more enlarged and modern calculation of 1 to 500, out of 29,000 Inoculated, 58 deaths only would enſue. Extend this calculation to Great-Britain and Ireland; by Davenant's eſtimate, the annual births amongſt 9 mil-

lions of inhabitants in theſe two iſlands will amount to about 300,000: a few thouſands more is immaterial for our groſs valuation: if all theſe 300,000 were to live to be Inoculated, and 1 out of 500 to die, the nation, inſtead of 30,000 Small-pox deaths annually, in this and her ſiſter iſland, would loſe but 600: and expanding the ſame calculation to all Europe, the blanks would amount to about *eight thouſand:* conſequently *three hundred and ninety-two thouſand lives* would be annually preſerved.

Should Inoculation take place univerſally amongſt the inhabitants of Great-Britain and Ireland in the early parts of life, that is under five years of age, and all beyond that ſtage have undergone the diſeaſe by the ſame precautions, in this predicament the infection, however virulent, could not extend itſelf in the natural way, but to a diminutive number of the community; for out of nine millions of inhabitants, thoſe under five years of age will not exceed *fourteen hundred thouſand*, and probably not one half of theſe are, in one year fit ſubjects for the operation.

Upon the firſt introduction of Inoculation, phyſicians, divines, and innumerable other writers cried out, that the infection would be ſpread, and the community ſuffer a greater loſs; but after ſixty years experience, we ſhould expect thoſe arguments, as well as the writers, had all died away, and that at this day, the ſame ſtale dregs of ignorance and obſtinacy would not be again retailed. To traduce general Inoculation, to increaſe the prejudices of the lower orders, and bulk of the community, againſt the practice, is, in my idea, neither wiſe, politic, nor humane. The general notion of all illiterate perſons is a kind of irreſiſtible fatality, and they are too apt, in diſeaſes, to commit all to God, as the ſtupid Turks do the plague, without "taking timely pre-"caution, to ſecure their families." Poſſibly many years muſt yet elapſe, before the whole kingdom will be awakened to a juſt ſenſe of its intereſt and ſafety; before cuſtom and prejudice are done away, and ignorance enlightened. To render Inoculation an early and univerſal practice, the legiſlature and the clergy ſhould add their venerable ſanction, influence, and aſſiſtance to the

feeble exhortations, and active humanity of medical men. It appears to me the moſt certain, expeditious, and cheap method of reinſtating in a few years a number of ſubjects equal to thoſe ſquandered in the preſent unfortunate war.

Every life ſaved by this practice is ſo much ſolid treaſure and ſtrength added to the nation. There is no diſeaſe where we have it ſo much in our power and command to leſſen mortality, as in the Small-pox by Inoculation. It is a bridge, furniſhed by Providence, to paſs over a yawning gulph, a raging whirlpool, in which millions of the human ſpecies have been wrecked. Baron Dimſdale is ſhocked, and his choler rouſed, at the propoſal of permitting liberty to travellers of every rank and deſcription to eſcape by this ſecure rout. Fortune muſt have been ſo kind and bountiful to favour thoſe who paſs that way with a golden key. Whether this reverence for titles and rich perſons proceeds from the Baron's natural diſpoſition, or was acquired by his ſhort tour to Ruſſia, I neither know nor care: the commonalty, and middling trades-people in this metropolis, who are not of the elect, will

not

not probably thank this Imperial phyſician for ſuch exotic ſentiments. If Baron Dimſdale is candid and ingenuous, he ſhould deſiſt from Inoculation in London, and in villages contiguous to the capital; he ſhould return all his fees to ſome charity, as a ſmall expiation for the public injury he muſt already, according to his profeſſed creed, have committed in the exerciſe of that vocation, and as an unequivocal proof of his ſincerity, and contrition for wilfully beſmearing his hands with human ſacrifices. His arguments, if they were of any real validity, would ſeal the final doom of Inoculation in every caſe and ſituation, whether in city, town, or country.

When men's actions or writings ſeem fairly and honeſtly directed for the public good, and without any ſiniſter bias, I can pardon their groſſeſt errors, or animadvert upon them with mild cenſure, and without diſpleaſure. In this tender and indulgent light, I can ſmile at the propoſal of an old pragmatical Greek philoſopher, who, obſerving many diſeaſes to enſue from changes in the temperature of the air, exhorted mankind to live in dens and caverns under ground,

where

where the ſun-beams and changes of the air could not pierce; and in one of which gloomy abodes, this crazy projector is ſaid to have lived many years: but had he, with fooliſh preſumption, propoſed to bury the poor, laborious, and middling claſſes in ſuch ſubterraneous cells for the benefit of their conſtitutions, and have left the rich and himſelf above ground, to baſk in ſnug houſes, I ſhould have ſpurned, if not with indignation, at leaſt with contempt at the philoſophy and the philoſopher.

Baron Dimſdale hints, " that an action " of damages would lay againſt a perſon, " who, by Inoculating *horned cattle* for a " contagious diſeaſe, would ſpread the infec- " tion in the neighbourhood." The plain interpretation of this poliſhed remark is to recommend the patrons and phyſicians of the Inoculating Diſpenſary as objects deſerving of proſecution, and as criminals who ſhould be puniſhed by the laws. I am not under the leaſt apprehenſion for their fate, and let Baron Dimſdale beware, leſt another perſon ſhould, in this ordeal, be convicted as the principal culprit. I will alſo ſuggeſt to the Baron a friendly admonition, that before he conſigns over theſe

gentlemen

gentlemen to dungeons and gibbets, to read the ſtory of the celebrated Galileo, who, as all men of literature know, was impriſoned by the ignorant monks of the inquiſition, and threatened to be burnt alive, for having aſſerted the rotatory motion of the earth. It is very ſingular, that Baron Dimſdale makes uſe of many of the ſame phraſes formerly employed by Wagſtaff, who wrote ſtrenuouſly againſt Inoculation upon its firſt introduction, and with libellous invectives inveighed againſt its patrons. Wagſtaff called the Inoculators public murderers, and with outrageous acrimony invoked the legiſlature to puniſh them.

To the reader and to the public I humbly ſubmit the final deciſion of this important controverſy, in which the intereſt and ſecurity of mankind are ſo materially involved: a ſtate of indifference and neutrality is incompatible with ſound policy and humanity. I wiſh my arguments to be deliberately weighed, and after mature examination and ſevere ſcrutiny, to be received or rejected, as they are built upon facts, ſupported by ſpecious or ſolid reaſoning, and as they appear to conduce to the ſafety and benefit of the nation.

tion. I flatter myſelf with having laid thoſe ſpectres which Baron Dimſdale conjured up to affright the metropolis, and the nation from general Inoculation. No man has ſo often thrown down the gauntlet in that cauſe, and braved defiance, as the Baron: he is in truth (what a witty author ſaid of the metaphyſicians) a furious gladiator, that fights hood-winked, and with a bandage bound faſt over his eyes.

My obſervations upon this ſubject ſhall now cloſe, by propounding a *quere* for public diſcuſſion, which the reader, if he chuſes, may call a revery. Would it not be poſſible and adviſeable to eradicate the Small-pox from Europe, to baniſh it to its original birth-place in either Arabia or India, and to ſet up barriers againſt its return and communication, as we ſhut out the plague? Should the contagion be once exterminated, and no remains of the ſpecific "nidus" left behind, there certainly appears no power in the climate, ſoil or air, at leaſt of Europe, again to regenerate ſuch a diſeaſe. To make this propoſition clear and intelligible, I ſhould treat of ſpecific contagions; but medical and profeſſional

men

men are no doubt ſufficiently well informed on that head.

If Small-pox had ſeized upon a perſon more than *once* in life, and the body afterwards, as in caſes of other infectious fevers and of plague, had ſtill been ſuſceptible of injury from variolous infection; either the human ſpecies would have preſented a frightful ſpectacle of corroded ſcars, and mangled deformity, or what is more probable, the greateſt part would, long before this time, have periſhed by Small-pox; but to prevent ſuch deplorable conſequences, mankind would have been under the neceſſity to unite with one general conſent, to oppoſe and chain down this inexorable foe.

There is no proſpect of our ever getting rid of variolous poiſon, unleſs ſome general, or rather univerſal league of this nature ſhould be entered into. To ſave four hundred thouſand lives annually ſlain in the European region alone by a ſingle enemy, is an object which merits the attention of all the different legiſlators and philoſophers of Europe. One kingdom ſingly could not, conſiſtent with propriety, and for obvious reaſons, attempt ſuch a critical experiment. Either

Inoculation

Inoculation ſhould be univerſal in the early parts of life, or (if practicable) Small-pox, like the plague, plucked up by the roots. The laſt I throw out merely as a curſory idea, but as a ſubject not unworthy of future inveſtigation. I find that I have inſenſibly run to a much greater length than at firſt ſetting out, I either expected or wiſhed.

CHAP. II.

Bills of Mortality: when eſtabliſhed in Europe: *their Defects: of the Mortality at different Ages in City, Town and Country: of Marriages and Births, and the medium of Children produced by City and Country Marriages: of the Comparative Numbers of the two Sexes, and their reſpective Mortality: of the Numbers alive at different Ages in any Nation: of the Proportion between City, Town and Country Inhabitants: various Tables in Illuſtration of the Comparative Mortality, and Decreaſe of Mankind at every Age in City and Country: of Great Cities, and the Principal Cauſes of Depopulation in them;*

them; exemplified by London: *with additional Remarks on the Defects of the* London *Bills.*

THE births, genealogies, and deaths of Adam's deſcendants, down to Noah, and the Patriarchs, are recorded in Scripture: ſome chapters of Geneſis are plain regiſters of births and mortality. The Iſraelites were at diſtant intervals muſtered and numbered by Moſes and his ſucceſſors; and in a few uncommon peſtilences the devaſtation is aſcertained in the Jewiſh hiſtory. The deſcent and pedigree of Kings and other great men, have alſo been kept in moſt nations who had made any progreſs in civilization; but general annual regiſters of births, diſeaſes and deaths, are modern eſtabliſhments, and were unknown to the ancients.

ON the continent regiſters were inſtituted, fifty or a hundred years before their introduction into England: 1538 exact records of weddings, chriſtenings and burials, were firſt ordered by the king and council to be kept in every pariſh church in England, by either the vicar or the curate. This order was very negligently obeyed in many pariſhes,

until

until 1559 in Queen Elizabeth's reign, when to prevent regiſters from rotting in damp churches, they were directed to be written on parchment. At firſt they ſeem, both in Germany and in England, to have been deſigned to prove the birth, death and deſcent of private perſons, and the right of inheritance in property or lands. In 1592, a year of peſtilence, bills of mortality for London were inſtituted; but were diſcontinued till 1603, another year of deſolating peſtilence, which was the only diſtemper then taken notice of in the printed reports. In 1629, the different diſeaſes and caſualties of thoſe who died, together with the diſtinction of ſexes were added and publiſhed: 1728, and not ſooner, the different ages of the dead were ordered to be ſpecified in the London bills. Upon firſt eſtabliſhing the diſtinction of diſeaſes and caſualties in the bills of the metropolis, the primary intention I believe, was to diſcover the numbers deſtroyed by the plague, and to detect concealed murders. At Vienna and Berlin, regiſters are kept nearly ſimilar as I underſtand to thoſe in London: Edinburgh, Norwich, Northampton, and ſome other towns of this iſland,

iſland, have alſo copied and imitated ſuch wiſe and uſeful examples.

Public records of births and mortality are now partly become the rules of political arithmetic; but unfortunately for Politicians and Medical-men, they are yet far too incorrect and imperfect. Regiſters of diſeaſes and deaths ſhould be entruſted to more ſkilful heads than to a couple of ignorant old women, nominated by each pariſh, and called in their diſtricts, pariſh ſearchers: at preſent they conſider the "ultimatum" of their commiſſion and duty, is merely to prevent private funerals and concealed murders. The whole buſineſs in London is conducted in the following inaccurate manner. Upon either being ſent for to inſpect a corpſe, or on hearing the bell toll, and inſpecting the books kept in the different churches, the ſearchers are apprized, from whence notice has been ſent of a death, in order that a grave may be opened: the two matrons then, whoſe induſtry is ſtimulated by a ſmall fee on each corpſe, and whoſe report is neceſſary previous to interment, ſet out to examine that no violence has been committed upon the dead, of which they have taken an official

oath to make a true declaration, and afterwards negligently enquire from the relations the name of the diſeaſe, adding the age and ſex. Theſe records, together with the chriſtenings, in the latter of which the ſearchers have no concern, are depoſited with the reſpective clerks of each pariſh church, and by them the chriſtenings of the eſtabliſhed church, and the burials in their reſpective parochial church-yards alone, are carried once every week to a general hall in the city: on the following day the weekly bill, comprehending theſe partial returns, is printed and publiſhed, and at the end of the year a general annual bill, in which all the weekly returns are conſolidated.

FROM bills conducted with more accuracy, and upon a larger ſcale, phyſicians and ſtateſmen might both draw ample ſources of information. If, as Dr. Price, and as Voltaire, and many other writers have obſerved nearly to the ſame effect, every ſeventh year, an account was taken under the direction of government, thro' every town and pariſh in the kingdom, the force, ſtrength, population, increaſe, decreaſe, reſources, trade, and health of the inhabitants might be

be known. It ſhould comprize a numerical liſt of every rank and order; of the married, unmarried, widows, widowers, ages, ſexes, weddings, chriſtenings, &c. In the medical columns ſhould be given, the ſtate of the weather and ſeaſons in that year; and in the dreary columns of death, the ſpecific diſeaſes which deſtroyed life. From ſuch an authentic magazine of facts and materials, national health, mortality, the diſeaſes moſt fatal to a nation, their growth or declenſion, the effects of diet, drinks, of medical practice, the ratio of population, and a multitude of political and medical queſtions ſtill entangled in doubts and intricacy, might be evolved.

A PLAN ſo general, individual induſtry alone, however indefatigable, cannot accompliſh without miniſterial power, and aſſiſtance to carry it into execution: the church, or a few uſeleſs ſtate ſinecures, may without any inconvenience ſpare a ſufficient revenue to carry it into effectual practice. In London, and indeed in all the large towns throughout the kingdom, no intermiſſion ſhould take place in the bills, as in the caſe of ſeptennial periodical regiſters: all the numerous diſſenting religious ſects, and the church-yards

hitherto excluded, ſhould be comprehended in the annual bills of the metropolis, both in reſpect to births and burials, and the function of inſpecting the dead committed to medical men with moderate ſalaries. Annexed to *each* diſeaſe ſhould be the numbers dying at *different ages* of that malady. Males grown up to maturity who die, ſhould be diſtinguiſhed either as married, widowers, or batchelors; and females of this deſcripion either as married, widows, or virgins. Such authentic data are greatly wanted by calculators of annuities, and reverſions of lives. At preſent we have, even in London, but partial and confuſed views of the exact amount and ratio of births and burials, and much more ſo of the ſlaughter by diſeaſes. We muſt too frequently ſuſpect, not only the report and capacity of the ſearchers, but alſo the negligence of the pariſh clerks, in carrying their returns to the general hall.

Calculations of human propagation, exiſtence, and mortality, derived from a prodigious maſs of obſervations and regiſters in various parts of Europe, have been publiſhed by ſeveral eminent philoſophers and mathematicians. The proſpects of life and death

death are now ſyſtematically adjuſted, and calculated for all ages, with as much exactneſs and probability by the annuitant and inſurance offices, as the chances on dice, or the blanks and prizes in a lottery-wheel. Graunt, ſomewhat later than the middle of the laſt century, firſt wrote a treatiſe on the London Bills of births and mortality, and was followed ſoon after by Petty and Davenant. This I apprehend was the epoch of a new ſcience in politics, philoſophy, and medicine. Graunt had many difficulties to encounter in this uſeful, but unprecedented attempt; and from a ſcantineſs of authentic vouchers and materials, wanders frequently into random conjectures. The preſent century has produced a number of excellent treatiſes upon the ſame ſubject. The moſt celebrated are Dr. Halley's, De Moivre's Treatiſe on Annuities, Suſmilch's Calculations, Simpſon's Select Exerciſes, ſome eſſays in the Philoſophical Tranſactions abridged, Short's Obſervations on various Bills of Mortality, Dr. Price's Eſſays, Birch's Collection of the London Bills to 1759; and laſtly, the original ſources, the bills of large capitals, and ſmaller towns.

It is neceſſary to premiſe, and to caution the reader, that the tables of mortality in different countries, and collected at diſtant periods diſagree conſiderably, and of courſe the calculations drawn from ſuch materials, are at variance. We cannot treat the ſubject with that accuracy which its extenſive importance requires; but to enumerate all the reaſons for our inability would be too tedious, and even voluminous. For medical purpoſes indeed, it is not indiſpenſibly requiſite to bring the matter to the ſame mathematical nicety, with the inſurance offices for lives and annuities.

Calculations which meaſure the annual decrement, in every period of town and country life, enlarge the phyſicians ideas reſpecting diſeaſes and mortality; without them prognoſtics muſt be very imperfect. In the next chapter, an attempt is made to form a groſs eſtimate of the proportional havock by different diſeaſes; theſe intereſting facts will, I truſt, naturally lead intelligent readers to a variety of new reflections upon medicine, and medical practice, and the probable means of ſtemming mortality. Phyſical writers have in general neglected, or at moſt barely ſkim-

med

med the ſurface of theſe ſubjects: the public regiſters of births, diſeaſes, and deaths are ſhamefully overlooked by Boerhaave, Hoffman, and all the great modern ſyſtematic authors. They leave us equally ignorant of the actual and comparative force of thoſe fiends, which haunt and ravage the world. To ſpeak in metaphorical phraſeology, in medical books, the extenſive deſolation of the moſt rapacious tyrants and conquerors, are confounded with the unintereſting hiſtory and petty depredations of a robber. In the courſe of many years attendance upon medical lectures, in different univerſities, I never once heard the bills of mortality mentioned.

The detached obſervations of phyſicians, or other literary individuals, confined perhaps to a ſmall town or pariſh; a meagre detail of village remarks, afford in many inſtances a foundation too ſlight to erect upon them any general or permanent concluſions. To form uſeful Tables of the ratio of mortality at various ages, to determine upon the relative havock by different diſeaſes, upon the general effects of ſeaſons, climates, and ſituations, of diet, drink, modern luxuries, and new manners, we ſhould extend our

views far beyond the narrow bounds of a pariſh, or even of a province; we ſhould alſo take in an interval of many years, and include large groups of mankind.

Bills of mortality demonſtrate this awful truth, that very few of the human ſpecies die of old age, or natural decay; by far the greateſt proportion are prematurely cut off by diſeaſes. Of all the animal tribe who bring forth one at a birth, none die in ſuch numbers in infancy as the human ſpecies. In London, and all the vaſt capitals of Europe, upon an average, one half of the children born, die under three years of age; at Vienna, by the bills, half die under two years old; but in country towns and villages, the proportion of infant mortality greatly decreaſes. At Mancheſter, a country town of England, half of the children die under five years of age: at Norwich, half die under ſix; and at Northampton, a country town, ſmaller than either of the two former, half the infants born ſurvive to ten years of age. London therefore will have loſt a number in the intermediate ſpace, from three to ten more than Northampton.

ATTEND next to the ſmall proportion of infant mortality in country diſtricts. By Dr. Short's bills, in ſeveral ſmall country villages of England, the major part born live to 25: 27: 33: and to 40. In many healthy country pariſhes and open diſtricts, half the inhabitants born, live to mature age, to 40, and 46, and in a few even to 50, and beget large families of children: in ſome extenſive country diſtricts of Switzerland, ſimilar obſervations have been made. Here is an aſtoniſhing diſparity between the duration of town and country life, but particularly, let it be engraved upon the memory, in the early ſtages of infant exiſtence, life then is extremely brittle; infants in cities reſemble tender, delicate plants, excluded from freſh air, or fiſh confined in muddy ſtagnant water; they periſh, before acquiring a ſolidity and ſeaſoning to endure the adulterated quality of the ſurrounding element.

AT birth an infant is not only uſhered into a new world, but every function of its body inſtantaneouſly undergoes new changes: an element of many thouſand pounds weight preſſes upon the ſurface of its body; this element, adulterated in cities with various

ous

ous mixtures and impurities, is drawn into its lungs, its diaphragm and muſcles of the breaſt act, the lungs expand, and reſpiration commences; the paſſage between the two auricles of the heart is then cloſed up, the ſphere of the circulation is extended, and the whole blood in its revolution paſſes through the lungs; the circulation through the navel-ſtring now cloſes, nouriſhment is taken in by the mouth, the digeſtive and all the ſecretory and excretory organs begin to perform their different offices: the tender creature is expoſed to ſounds, in a few days to light, and with its delicate machinery has ſoon to encounter pain and diſeaſes.

What will be the annual decreaſe, at every age, out of any given number, one thouſand, or fifteen hundred, for example, from birth to a hundred years old, in cities and country diſtricts, appears diſtinctly in the tables inſerted near the end of this chapter. The mortality amongſt infants in the firſt year after birth, is greateſt of all: a London infant at birth has but an equal chance of living to three years old, but in the country half born arrive at full grown

maturity: upon reaching the third year in great cities, infants are ſomewhat ſeaſoned, and the mortality abates: there is not afterwards out of equal capitals, that prodigious diſproportion of deaths between city, town, and country, they approach gradually nearer to a par.

From the tables of Dr. Short, and of Birch, it is manifeſt, that more die in London under two years old, than from 2 to upwards of 40, and more under 5 years old, than from 5 to between 50 and 60: yet under 5 there are but an inconſiderable number alive compared to thoſe above that age; the deaths are greatly diſproportioned to the living numbers or capitals. From 5 to 20, mortality in city, town, and country is very ſmall. From 8 to 16 years of age, 1 out of 70 $\frac{3}{4}$ of the Chriſt ſchool boys are ſaid to die: Davenant rates the decrement in theſe years at only 1 per cent. From 20 to 30 more die in London and other great cities than in the 15 preceding years, and the deaths continue ſwelled to 60. One principal reaſon (though not the only one) of the great ſwell in the London bills from 20 to 40 is, that within this interval of life

the

the majority of the new ſettlers or recruits arrive, and conſequently raiſe the deaths from 20 to 40 beyond their due proportion. After paſſing the meridian, and in the evening of life, the ſeaſoned inhabitants of cities ſeem rather to have the advantage of the country in health and longevity. That is to ſay, the numbers alive in the country, at 65, 70, and 80 years of age, are greater proportionally than in cities; but the latter claſs arrived at thoſe years in London, have ſurer expectations of life. In both the few ſurvivors at 90 years of age, out of every 1000 will have loſt almoſt all their fellow travellers in the journey long before reaching that goal.

Since the days of Moſes, human exiſtence has been circumſcribed within the ſame narrow bounds. In the London bills of mortality, during a period of 30 years, that is, from 1728 to 1758, the total deaths amount to 750,322; and of all this number, 242 only reached beyond 100 years of age; one of whom arrived at the age of 138. In ſome races and families of mankind longevity ſeems to be hereditary, and his age, though little more than a dream, exceeds that of all

other

other living creatures, a few only excepted. Amongſt the quadrupede creation, the elephant ſurpaſſes man in longevity: amongſt the birds, the ſwan and a few others are found to live upwards of a century: the age of fiſhes is determined with more ingenuity than certainty: ſome ſeem to equal man in years, but the fecundity of numbers of the finny race is almoſt incredible: amongſt the numerous vegetable tribe, the oak, the cheſnut, and many other great trees live ſeveral centuries.

WHEREVER the number of inhabitants in any kingdom, city, or village, continues the ſame without increaſe or decreaſe; it is evident that there the annual births and deaths will be equal, and the ſupply proportioned to the waſte. If any town juſt ſupports itſelf by procreation only, as many will die at all ages in the year, as are born in that year. In all the large cities of Europe, in London, Paris, Vienna, Rome, Dreſden, Berlin, Amſterdam, Edinburgh, Dublin, and in almoſt all country towns of conſiderable ſize, the total burials annually exceed the births; but in country pariſhes, ſmall villages, and open diſtricts of country, the

annual

annual births exceed the burials: from this redundance, a recruit is furniſhed for the conſumption of cities, armies, navies, war, extraordinary epidemical ſickneſs, colonization, and other contingencies: the country ſurplus prevents depopulation. In the country diſtrict of Vaux in Switzerland during 10 years the deaths were 2504, the births 3155. The country, ſays Graunt, has 6339 chriſtenings for 5280 burials. In the rigorous northern climate of Norway, and the diſtrict of Chriſtiana (in 1761) the burials were 6929, the chriſtenings 11024; and of the former no leſs than 394 had lived to 90, and 65 to 100 years of age. In the little fertile iſland of Madeira, according to Dr. Heberden, the inhabitants double themſelves within eighty-four years. In North America, if Dr. Franklin's calculations are authentic, the inhabitants, in a few of the ſouthern provinces, have doubled themſelves in the ſhort ſpace of 15 years, and in ſome of the more northern provinces of that continent in 22 and 25 years. On the contrary, it is calculated, that in London, within the laſt 150 years, near to 1,000,000 more of the human ſpecies have been waſted, beyond

what

what were raiſed by its own original growth and procreation.

The aggregate annual deaths of every kingdom including town and country, muſt be ſomewhat inferior to the annual births, otherwiſe depopulation would be the conſequence: an adequate ſupply of foreign emigrants could alone prevent ſuch an event. In the kingdom of Pruſſia from 1715 to 1718, at an annual medium were baptized 78,826; buried 55,852, married 20,520½. In Sweden the total annual average of births for 9 years ending in 1763 was 90,240, of deaths 69,125. In France during 3 years, and ending in 1772, the annual average of births was 920,918, of deaths 780,040: this is more than double, and nearer to treble the annual births and burials in Britain and Ireland. Theſe different ſurveys were made by order of the Pruſſian, Swediſh, and French courts, but I will not vouch for their correctneſs: they are mentioned by Dr. Short and Dr. Price.

Taking the whole maſs of inhabitants in different great cities, and afterwards in towns and country diſtricts, from birth to one hundred years, and upwards, they are computed to die in the following annual proportion to

the,

the living. In London, one of 20 ¾: Rome 1—23: Vienna 1—19½: Berlin 1—26: Amſterdam 1—21 or 22: Dublin 1—22. This is Dr. Price's calculation; but Suſmilch and Dr. Halley, make only 1—24 to 29 to die annually in great cities. In Edinburgh, although containing not more than fifty thouſand inhabitants, yet the deaths through the different ſtages of life, agree nearly with London. *Cæteris paribus*, the mortality in cities will bear a proportion to their ſize; but the inhabitants of Edinburgh are crowded into a very ſmall ſpace, many families dwell together in the ſame houſe; theſe, with ſome other inconveniencies and uncleanlineſs, render it more unwholeſome: perhaps bad nurſing and neglect of cleanlineſs ſo inimical to the health of infants, is there more prevalent amongſt the lower claſs. In Norwich, which contains about thirty-ſix thouſand inhabitants, the annual average of deaths is 1---24: Northampton 1---26: ſmaller towns 1---30. In ſeveral provinces and country villages of European kingdoms, the proportion of annual deaths to the living, is eſtimated from 1---32 and 33 to 41, 45, and 50. In the iſland of Madeira, to 1---50. In

upwards

upwards of 1000 country pariſhes on the continent mentioned by Suſmilch, during ſix years, on an average 1 of 43 of the inhabitants died, and in 106 other pariſhes 1 of 50. Within thoſe different ſhort intervals of time, will have died in the reſpective cities and country places alluded to, a number equal to the total amount of the inhabitants. One out of thirty-two, thirty-three, and up to thirty-five, is ſuppoſed to be near the decreaſe of a ſociety at large throughout Europe, comprehending together cities, towns, and country; "that is, mankind enjoy amongſt them from "about 32, 33 to 35 years each of exiſt-"ence."

The Abbé Reynal, that elegant and philanthropic French hiſtorian, calculates that 1-7th of the African negroes die annually in the Weſt India iſlands, which he aſcribes not ſo much to the climate, for that certainly is preferable to Africa, but to the oppreſſion of their maſters. He computes, that out of nine millions of thoſe injured men, dragged by violence from their own country to eternal ſlavery in America, and the Weſt India Iſlands, and compelled like horſes or mules to exhauſt their blood and ſweat, to pamper ava-

ricious tyrants in idleneſs and luxury, ſcarce one million and a half now ſurvive. This aſtoniſhing decreaſe, with deference to that amiable author, I believe is principally to be imputed to doubts and prejudices entertained by the planters, whether it would not be more profitable to import grown-up negroes, than to propagate the breed in their different plantations. From this inhuman and barbarous policy, fewer wretches now ſurvive to linger in miſery.

I SHALL preſent in ſeveral other important points of view both medical and political, the general laws which govern propagation, population, and mortality. Suſmilch found that in all Pomerania during nine years, one of ſix perſons who married were either widowers or widows: that is, one of three was a ſecond or third marriage on the ſide of the man or the woman. Calculators are unanimous that "marriages in the country ſel-" dom produce leſs than four children each, " generally between four and five, and ſome-" times five; but in towns ſeldom above " four, generally between three and four, and " ſometimes under three." In Short's ſurvey of a variety of ſmall towns and country

pariſhes, he found that each marriage produced 4½ children, *at a medium*; for ſome married pairs have only one or two, others again have ſix, eight, and a few a dozen children, and a ſmall remnant are barren and improlifick.

NATURAL children are included in the births, and raiſe their proportion to the legalized and regiſtered weddings higher than they would, without this extraneous addition, appear. In ſome German regiſters Short found that out of 333,655 births, the illegitimate amounted to one thirty-ſeventh part; and in an inland town of England, that out of 10,337 births, 284 were illegitimate: applying this laſt proportion to the annual births in Britain and Ireland, and ſtating them at 300,000, the illegitimate would amount to upwards of 8000 annually: perhaps in London they are more numerous than in the country. To aſcertain the proportion between ſingle births, and twins, Short examined the regiſters of 3 large pariſhes during a ſeries of years: the ſingle births amounted to 11,415, the twins and tergemini to 311, or about 1 of 35. Accocheurs may poſſibly make ſome uſe of this obſervation.

PROVIDENCE has ordered, that through the various nations of the world, at leaſt of Europe, a few more males ſhould be born than females; and indeed the waſte by wars, intemperance, and other caſualties, to which the former are more expoſed, render ſuch a ſurplus neceſſary. In Dr. Arbuthnot's table printed in the Philoſophical Tranſactions of the difference between the ſexes born: in 46 years were baptized of males 329,742, of females 308,644: exceſs of males 21,098. By the London bills from 1657 to 1776, I find that there have been born of males 10,41,149, of females 983,061: or 18 to 17; and the exceſs of males in this long interval of 120 years is only 58,088. Amongſt nine millions of people in Britain and Ireland, the total births of males and females in ſix years would not probably ſurpaſs this ſum of two millions; and it demonſtrates, that the exceſs of male births above the female, is not ſo conſiderable as ſome books of calculation have repreſented. In volume the ſeventh of the Philoſophical Tranſactions abridged, there is an account of the births during ſeveral years at Vienna, Breſlaw, Dreſden, Leipſick, and Ratiſbon; in theſe cities male and female births

were

were as 19 to 18. More males alſo are brought forth ſtilborn, and throughout infancy and childhood, *eſpecially*, the deaths of males are ſaid to preponderate over the other ſex.

Dr. Price in page 271 of his valuable work, ſays, "It appears that at Northampton, tho' "*more males* are born than *females*, and nearly "the *ſame* number die; yet the number of "living *females* there was greater than the "number of males in the proportion of 39 "to 30: this cannot be accounted for with-"out ſuppoſing that males are more ſhort-"lived than females." It is with the utmoſt diffidence that I venture to put my opinion in oppoſition to ſo truly reſpectable authority as Dr. Price: but in this inſtance I conceive, that if more males were born at Northampton than females, and yet their deaths were *equal*; the exceſs of females there cannot be aſcribed to any other cauſe than to the greater export and emigration of males: every one who has reſided but a few days only at either Northampton, Birmingham, Manchester, Norwich, or other great manufactoring towns of this country, knows that they are the great nurſeries of our armies; there

is a conſtant drain of the vigorous youth from them in profound peace, and much more ſo during war. From 1702 to 1752, during 50 years, I find the proportions of male and female deaths in London as follows: deaths of males 618,076: of females 626,692: majority of female burials 8,692—whence does it happen that female deaths preponderate over the male, ſeeing that certainly more of the latter are born, and as Graunt, Dr. Price, and other calculators maintain, that the mortality of males at *all* ages is greater than that of females. I think the only rational ſolution of this difficulty which ſeems to have embarraſſed calculators, is by ſuppoſing a greater exportation of males than of females from London. When we reflect upon the almoſt inceſſant wars by ſea and land, in which this iſland has been engaged for many centuries, the unwholeſome climates to which ſoldiers and ſailors have been ſent, with the emigration, and even tranſportation to new colonies, this devouring conſumption would fully require all the redundance of males, and it is not wonderful that females ſhould be more numerous.

CONSIDERING the perils of child-bearing, and many other vexatious diſeaſes to which the female ſex are ſubjected by their particular formation, and that phyſicians have many more female than male patients, we might haſtily conclude that the chances of living longeſt was in favour of the huſband; but the contrary is the fact. In Breſlaw, during 8 years 5 married men died to 3 married women. Suſmilch in a review of ſeveral kingdoms and principalities of Germany, found that 3 married men died to 2 married women, and conſequently that widows were much more numerous than widowers: Short alſo found by ſeveral German regiſters, comprizing Breſlaw, Dreſden, and Leipſick, that 46 married men were buried for 29 married women. Dr. Price eſtimates the chance in favour of the wife, being the ſurvivor of marriage, as 3 to 2; and upon this calculation, the ſociety of clergy in Scotland eſtabliſhed funds to ſupport their widows. From a return of the clerical widows and widowers, in that part of the iſland, the latter were only in the proportion of twelve to twenty, which ſhews, that more huſbands have died. Davenant makes the widows in England ſtill

more numerous, compared to the widowers. By an enlarged ſurvey of ſeveral principalities and cities of Germany, and recorded by Suſmilch, the widows were as 3 and 4 to 1 widower. At marriage it is true, there is generally a diſproportion of years; the man is commonly from 6 to 12 years older than the woman, and therefore ſhould die ſooner: perhaps alſo more widowers in proportion enter into a ſecond marriage, which will reduce their numbers.

Upon a ſurvey of Edinburgh, and ſome other cities it appeared, that the total of living females were more numerous than the males, as 4 to 3. Davenant's calculation for London, makes the females exceed the males, as 13 to 10, and in other cities and towns, as 9 to 8. At Berlin and Northampton, by accurate accounts, the females alſo conſtitute the majority: but in country diſtricts Graunt and Suſmilch agree, that the two ſexes approach nearer to an equality. I took the liberty in one of the preceding pages, when ſpeaking of Northampton and London, to alledge the greater exportation of males, as one cauſe of thinning their numbers.

At Berlin, calculators remarked, that more married women were alive at great ages, than

thoſe who continued ſingle. I obſerve in a late hiſtory of Iceland, by Van Troil of Sweden, that in this iſland too, the women are ſaid to live to a greater age than the men, and thoſe eſpecially who have had many children. Philoſophers ſuggeſt with good reaſon, that following the ſalutary dictates of nature, and uniting in matrimony, contributes to the health and longevity of the female ſex.

Dr. Halley thinks the number alive in any kingdom under 16 years of age, conſtitute about one third of all living above that ſtandard; and that thoſe between 20 and 42 years of age make about one third of the whole inhabitants. Dr. Price ſuppoſes nearly an equal proportion living, under ſixteen, and above that age, but that the latter are the moſt numerous: other calculators, as Davenant, fix the mean about twenty. I ſhould imagine, that in great cities, where there are comparatively fewer breeders, and children, than in open country diſtricts, Dr. Halley's or Davenant's calculation is more exact.

Davenant ſays, if the inhabitants in this part of our iſland called England, are ſuppoſed at 5,500,000, the total yearly births at 190,000, the ſundry ages of all thoſe inhabitants

habitants will be as follows: under one year old are living 170,000: under 5 years old 820,000: under 10 years old, 1,520,000: under 16 years old, 2,240,000: this is not one half of the inhabitants. Above 16 years old are 3,260,000: of which laſt number he reckons 600,000 to have paſſed 60 years of age; whereof are males 270,000, females 330,000. It is eaſy to extend theſe calculations to 9,000,000 of inhabitants, or to all Europe.

Susmilch collected with great care a multitude of materials in ſeveral kingdoms of the continent, to enable him to determine with probability, the proportion between the inhabitants reſiding in town and country. If the reſult of his enquiries can be depended upon as a general rule for other European nations, the inhabitants of the country exceed thoſe in cities and towns, as $3\frac{1}{2}$ to 1.

To determine the exact amount of inhabitants in any kingdom, the moſt certain method would be by making an actual and univerſal ſurvey through every houſe: this is often done in ſeveral kingdoms, and in none more culpably neglected than in this iſland: Engliſh calculators therefore have been under the neceſſity,

ceſſity, by other laborious proceſſes, to make at leaſt plauſible conjectures of the *national* population. One way is by taking the number of houſes, and by allotting 5 inhabitants to a houſe: in a multitude of large country towns and open diſtricts in England, Holland, Switzerland, Italy, &c. and regiſtered in the writings of Short, Price, and many others, 5 inhabitants to a houſe, at a general medium, is not far from the truth. In great cities, however, we ſhould err prodigiouſly by forming ſimilar concluſions. Berlin not many years ago contained 16 inhabitants to a houſe: Paris conſiſted of 28,000 houſes, and nearly about 16 inhabitants to a houſe: Edinburgh and Vienna are alſo crowded; in the latter an entire family has only a ſingle floor for a dwelling: London likewiſe in the winter ſeaſon contains perhaps more than 6 to a houſe. Beſides, in large kingdoms it is difficult to procure a correct regiſter of all the houſes. Another way of computing the number of inhabitants in towns, is by the annual births and burials: when they are equal, and conſequently there is no increaſe or decreaſe of the inhabitants, multiply the uſual proſpect or decrement of life in that city or town, by the medium yearly of births, which

will

will give the total local amount of the inhabitants: but as it rarely happens that the births and burials are equal, or that we can aſcertain the exact amount of either, this proceſs is imperfect. In great cities 1 at leaſt out of 5 families will die annually at a medium, and in ſmall country towns and open diſtricts 1 out of 7, 8, 9, and in a few healthy places 1 only out of 10 families.

GREAT BRITAIN and Ireland contain about 9,000,000 of inhabitants; half of thoſe are females, at leaſt we ſhall ſet them down as ſuch to avoid fractions; remain then four millions and a half of males, young and old: of this laſt lot, one half are under 16, or at moſt 20 years of age: thoſe on the other ſide amounting to two millions and a quarter may be called fighting men; but out of them muſt be deducted for aged, infirm, diſeaſed, and cripples; for a diverſity of trades, arts, and manufactories; for agriculture, merchandize, and commerce; for literary profeſſions, ſuch as divines, phyſicians, ſurgeons, medicaſters, and lawyers; for idle gentlemen, and men of independent fortune: how many able fighting men in the vigour of life after all deductions, could ſuch a nation

ſupport

ſupport in her armies and navies for any conſiderable time, without greatly injuring trade, and depopulating the two kingdoms. Soldiers and ſailors do not contribute to the general procreative ſtock, in any degree equal to huſbandmen and mechanics. Graunt and Davenant have ſome curious ſchemes and calculations of this nature; they are it is true chiefly of a political tendency, though not altogether foreign to medical enquiries; and at the utmoſt I cannot be accuſed of making above one page of excurſion from the text and ſubject of the chapter. Throughout this conciſe diſquiſition, I have attempted to ſketch the outlines and ſkeleton merely of a moſt important but novel branch of medical ſtudies: I wiſh to uſher it into more general notice and familiarity amongſt profeſſional men.

The following tables will exhibit a diſtinct proſpect of the fates clipping the mortal thread of life: but we are not to ſuppoſe, that in every inſtance there will be annually a regular arithmetical diminution in the exact proportion, adjuſted by calculators in their tables for city, town, and country mortality; ſome years fewer may happen to die, and in other years a greater number.

Dr.

Dr. Short's Table, from January 1ſt, 1728 to 1743, a period of 15 years, died by the London bills at all all ages, taken at an annual medium in the following proportions.

Years of Age.		Died.
Under 2	——	9910
from 2 to 5	——	2411
5 —10	——	980
10 —20	——	851
20 —30	——	2060
30 —40	——	2471
40 —50	——	2510
50 —60	——	2231
60 —70	——	1675
70 —80	——	1200
80 —90	——	634
90—100	——	117
Total annual medium of deaths in this period		27058

A Table of 30 years, taken from the London bills, beginning with 1728, and ending with 1757, ſhewing the *total* number of deaths and decreaſe in this period at every age.

Years of Age.		Died.
Under 2	——	272903
from 2 to 5	——	64745
5— 10	——	25912
10— 20	——	22891
20— 30	——	58474
30— 40	——	71502
40— 50	——	73258
50— 60	——	59872
60— 70	——	47269
70— 80	——	33679
80— 90	——	16948
90—100	——	496
100—138	——	242
Total deaths in this period at all ages		750322

A Table

A TABLE of Dr. Price's, from the bills of one pariſh, in the ſmall country town of Northampton, beginning with 1735, and ending with 1770; a ſpace of 36 years. In this interval were chriſtened 3242, buried 3690.

Years of Age.		Died.
Under 2	——	1206
from 2 to 5	——	276
5— 10	——	155
10— 20	——	155
20— 30	——	297
30— 40	——	257
40— 50	——	297
50— 60	——	300
60— 70	——	293
70— 80	——	285
80— 90	——	155
90—100	——	14
	Total	3690

THE following Tables are ſelected from ſeveral authors, but may be found in Dr. Price's works, intermixed with a maſs of other calculations, chiefly relative to annuities and pecuniary tranſactions: they are here employed for a much more momentous purpoſe: their medical utility in illuſtrating the ratio and gradations of mortality in cities, towns, and country, will be evident at firſt view. The firſt column o points out the age, the ſecond column 1000 the number living at that age, the third column 320 the numbers who die in that year, and ſo

on

on to the end. The number of living perſons in the ſecond column at the head oppoſite to 0 are ſuppoſed to be all born together on the firſt day of the year, and in like manner thoſe living oppoſite to 1 are ſuppoſed all juſt to have attained to one year of age.

Shewing

Shewing the Probability of the Duration of Life in LONDON, deduced by Mr. *Simpſon*, from obſervations on the Bills of Mortality in LONDON for 10 years, from 1728 to 1737.

Ages.	Perſons living.	Decr. of Life	Ages.	Perſons living.	Decr. of Life.	Ages.	Perſons living.	Decr. of Life.
0	1000	320	27	321	6	54	135	6
1	680	133	28	315	7	55	129	6
2	547	51	29	308	7	56	123	6
3	496	27	30	301	7	57	117	5
4	469	17	31	294	7	58	112	5
5	452	12	32	287	7	59	107	5
6	440	10	33	280	7	60	102	5
7	430	8	34	273	7	61	97	5
8	422	7	35	266	7	62	92	5
9	415	5	36	259	7	63	87	5
10	410	5	37	252	7	64	82	5
11	405	5	38	245	8	65	77	5
12	400	5	39	237	8	66	72	5
13	395	5	40	229	7	67	67	5
14	390	5	41	222	8	68	62	4
15	385	5	42	214	8	69	58	4
16	380	5	43	206	7	70	54	4
17	375	5	44	199	7	71	50	4
18	370	5	45	192	7	72	46	4
19	365	5	46	185	7	73	42	3
20	360	5	47	178	7	74	39	3
21	355	5	48	171	6	75	36	3
22	350	5	49	165	6	76	33	3
23	345	6	50	159	6	77	30	3
24	339	6	51	153	6	78	27	2
25	333	6	52	147	6	79	25	
26	327	6	53	141	6			

The total number of inhabitants, probably about 650,000. One half born died under 3 years age.

Shewing the Probabilities of Life in LONDON for all Ages. Formed from the Bills for 10 years, from 1759 to 1768. By Dr. Price.

Ages.	Persons living.	Decr. of Life	Ages.	Person. living.	Decr. of Life	Ages.	Person. living	Decr. of Life.
0	1518	486	31	404	9	62	132	7
1	1032	200	32	395	9	63	125	7
2	832	85	33	386	9	64	118	7
3	747	59	34	377	9	65	111	7
4	688	42	35	368	9	66	104	7
5	646	23	36	359	9	67	97	7
6	623	20	37	350	9	68	90	7
7	603	14	38	341	9	69	83	7
8	589	12	39	332	10	70	70	6
9	577	10	40	322	10	71	70	6
10	567	9	41	312	10	72	64	6
11	558	9	42	302	10	73	58	5
12	549	8	43	292	10	74	53	5
13	541	7	44	282	10	75	48	5
14	534	6	45	272	10	76	43	5
15	528	6	46	262	10	77	38	5
16	522	7	47	252	10	78	33	4
17	515	7	48	242	9	79	29	4
18	508	7	49	233	9	80	25	3
19	501	7	50	224	9	81	22	3
20	494	7	51	215	9	82	19	3
21	487	8	52	206	8	83	16	3
22	479	8	53	198	8	84	13	2
23	471	8	54	190	7	85	11	2
24	463	8	55	183	7	86	9	2
25	455	8	56	176	7	87	7	2
26	447	8	57	169	7	88	5	1
27	439	8	58	162	7	89	4	1
28	431	9	59	155	8	90	3	1
29	422	9	60	147	8			
30	413	9	61	139	7			

The reader may find in Dr. Price's works a separate essay on the proper method of constructing tables for determining the rate of mortality.

Shewing the Probabilities of Life at VIENNA, formed from the Bills for eight Years, as given by Mr. SUSMILCH, in his *Gottliche Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1495	682	31	364	6	62	129	6
1	813	107	32	358	5	63	123	7
2	706	61	33	353	6	64	116	7
3	645	46	34	347	7	65	109	8
4	599	33	35	340	8	66	101	8
5	566	30	36	332	8	67	93	8
6	536	20	37	324	8	68	85	7
7	516	11	38	316	9	69	78	7
8	505	9	39	307	9	70	71	6
9	496	7	40	298	8	71	65	5
10	489	6	41	290	7	72	60	5
11	483	5	42	283	6	73	55	4
12	478	5	43	277	6	74	51	4
13	473	6	44	271	7	75	47	5
14	467	6	45	264	8	76	42	5
15	461	6	46	256	9	77	37	5
16	455	7	47	247	9	78	32	5
17	448	6	48	238	9	79	27	4
18	442	6	49	229	9	80	23	3
19	436	6	50	220	8	81	20	2
20	430	5	51	212	7	82	18	2
21	425	5	52	205	7	83	16	2
22	420	5	53	198	7	84	14	2
23	415	6	54	191	7	85	12	2
24	409	6	55	184	8	86	10	2
25	403	6	56	176	8	87	8	2
26	397	6	57	168	9	88	6	2
27	391	7	58	159	8	89	4	1
28	381	7	59	151	8	90	3	1
29	377	7	60	143	7	91	2	1
30	370	6	61	136	7	92	1	1

Contains upwards of 200,000 inhabitants; one half born died under 3 years of age.

Shewing the Probabilities of Life at BERLIN, formed from the Bills during 4 Years, from 1752 to 1755, given by Mr. SUSMILCH, * in his *Gottliche Ordnung*.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1427	524	33	361	7	65	112	6
1	903	151	34	354	7	66	106	7
2	752	61				67	99	7
3	691	73	35	347	8	68	92	6
4	618	45	36	339	9	69	86	6
			37	330	10			
5	573	21	38	320	10	70	80	6
6	552	15	39	310	10	71	74	6
7	536	13				72	68	6
8	523	9	40	300	10	73	62	5
9	514	7	41	290	9	74	57	5
			42	281	8			
10	507	5	43	274	7	75	52	5
11	502	4	44	266	7	76	47	5
12	498	4				77	42	5
13	494	4	45	259	7	78	37	5
14	490	4	46	252	7	79	32	4
			47	245	7			
15	486	4	48	238	7	80	28	4
16	482	5	49	231	7	81	24	3
17	477	5				82	21	2
18	472	5	50	224	7	83	19	2
19	467	6	51	217	7	84	17	2
			52	210	7			
20	461	6	53	203	8	85	15	2
21	455	6	54	195	8	86	13	2
22	449	6				87	11	2
23	443	7	55	187	8	88	9	2
24	436	8	56	179	8	89	7	1
			57	171	8			
25	428	9	58	163	9	90	6	1
26	421	9	59	154	9	91	5	1
27	412	9				92	4	1
28	403	9	60	145	8	93	3	1
29	394	9	61	137	7	94	2	1
			62	130	6			
30	385	9	63	124	6			
31	376	8	64	118	6			
32	368	7						

* This writer has also given the bills of the parish of St. *Peter*'s at Berlin, for 24 years; and a Table formed from them, agrees nearly with this.—The number of inhabitants when this bill was formed were about 115,000.

Shewing the Probabilities of the Duration of Life, as deduced by Dr. *Halley* from Obſervations on the Bills of Mortality of BRESLAW.

Ages.	Living.	Decr.	Ages.	Perſons living.	Decr. of Life.	Ages.	Perſons living.	Decr. of Life.
0	000	00						
1	1000	145	31	523	8	61	232	10
2	855	57	32	515	8	62	222	10
3	798	38	33	507	8	63	212	10
4	760	28	34	499	9	64	202	10
5	732	22	35	490	9	65	192	10
6	710	18	36	481	9	66	182	10
7	692	12	37	472	9	67	172	10
8	680	10	38	463	9	68	162	10
9	670	9	39	454	9	69	152	10
10	661	8	40	445	9	70	142	11
11	653	7	41	436	9	71	131	11
12	646	6	42	427	10	72	120	11
13	640	6	43	417	10	73	109	11
14	634	6	44	407	10	74	98	10
15	628	6	45	397	10	75	88	10
16	622	6	46	387	10	76	78	10
17	616	6	47	377	10	77	68	10
18	610	6	48	367	10	78	58	9
19	604	6	49	357	11	79	49	8
20	598	6	50	346	11	80	41	7
21	592	6	51	335	11	81	34	6
22	586	7	52	324	11	82	28	5
23	579	6	53	313	11	83	23	4
24	573	6	54	302	10	84	19	4
25	567	7	55	292	10	85	15	4
26	560	7	56	282	10	86	11	3
27	553	7	57	272	10	87	8	3
28	540	7	58	262	10	88	5	2
29	539	8	59	252	10	89	3	2
30	531	8	60	242	10	90	1	1

The number of inhabitants 34,000—1238 was then the annual medium of births at Breſlaw, and 1000 is the number living at 1 year and *under:* therefore about 900 only ſhould ſurvive to 1 year of age. The numbers living in the *early* parts of life are given too high in this table.

Shewing the Probabilities of Life at NORTHAMPTON. By Dr. Price.

Ages.	Persons living.	Decr. of Life	Ages.	Persons living.	Decr. of Life.	Ages.	Persons living.	Decr. of Life.
0	1149	300	31	428	7	62	187	8
1	849	127	32	421	7	63	179	8
2	722	50	33	414	7	64	171	8
3	672	26	34	407	7	65	163	8
4	646	21	35	400	7	66	155	8
5	625	16	36	393	7	67	147	8
6	609	13	37	386	7	68	139	8
7	596	10	38	379	7	69	131	8
8	586	9	39	372	7	70	123	8
9	577	7	40	365	8	71	115	8
10	570	6	41	357	8	72	107	8
11	564	6	42	349	8	73	99	8
12	558	5	43	341	8	74	91	8
13	553	5	44	333	8	75	83	8
14	548	5	45	325	8	76	75	8
15	543	5	46	317	8	77	67	7
16	538	5	47	309	8	78	60	7
17	533	5	48	301	8	79	53	7
18	528	6	49	293	9	80	46	7
19	522	7	50	284	9	81	39	7
20	515	8	51	275	8	82	32	6
21	507	8	52	267	8	83	26	5
22	499	8	53	259	8	84	21	4
23	491	8	54	251	8	85	17	4
24	483	8	55	243	8	86	13	3
25	475	8	56	235	8	87	10	2
26	467	8	57	227	8	88	8	2
27	459	8	58	219	8	89	6	2
28	451	8	59	211	8	90	4	2
29	443	8	60	203	8	91	2	1
30	435	7	61	195	8	92	1	1

The number of inhabitants 5156.

Shewing the Probabilities of Life in the Country Diſtrict of VAUD, SWITZERLAND, from the Regiſters of 43 Pariſhes, given by Mr. *Muret*, in the Firſt Part of the Bern Memoirs for the Year 1776.

Age.	Living	Decr.	Age.	Living	Decr.	Age.	Living	Decr.
0	1000	189	31	558	5	62	286	12
1	811	46	32	553	5	63	274	12
2	765	30	33	548	4	64	262	12
3	735	20	34	544	5			
4	715	14				65	250	14
			35	539	6	66	236	16
5	701	13	36	533	6	67	220	18
6	688	11	37	527	7	68	202	18
7	677	10	38	520	7	69	184	16
8	667	8	39	513	7			
9	659	6				70	168	15
			40	506	6	71	153	13
10	653	5	41	500	6	72	140	11
11	648	5	42	494	6	73	129	10
12	643	4	43	488	6	74	119	10
13	639	4	44	482	6			
14	635	4				75	109	11
			45	476	7	76	98	13
15	631	5	46	469	8	77	85	14
16	626	4	47	461	10	78	71	13
17	622	4	48	451	10	79	58	12
18	618	4	49	441	10			
19	614	4				80	46	10
			50	431	9	81	36	7
20	610	4	51	422	8	82	29	5
21	606	4	52	414	8	83	24	4
22	602	5	53	406	9	84	20	3
23	597	5	54	397	9			
24	592	5				85	17	3
			55	388	11	86	14	3
25	587	5	56	377	13	87	11	2
26	582	5	57	364	16	88	9	2
27	577	5	58	348	17	89	7	2
28	572	5	59	331	17			
29	567	4				90	5	1
			60	314	15			
30	563	5	61	299	13			

In this country province were 112,951 inhabitants, and one half born lived to the age of 41.

Shewing the Probabilities of Life in a Country Pariſh in BRANDENBURG, formed from the Bills for 50 Years, from 1710 to 1759, as given by Mr. SUSMILCH, in his *Gottliche Ordnung*.

Age.	Living.	Decr.	Age.	Living.	Decr.	Age.	Living.	Decr.
0	1000	225	31	482	5	62	260	12
1	775	57	32	477	5	63	248	12
2	718	31	33	472	5	64	236	12
3	687	23	34	467	5	65	224	11
4	664	22	35	462	6	66	213	11
5	642	20	36	456	6	67	202	12
6	622	15	37	450	6	68	190	12
7	607	12	38	444	6	69	178	12
8	595	10	39	438	6	70	166	13
9	585	8	40	432	5	71	153	15
10	577	7	41	427	5	72	138	16
11	570	6	42	422	5	73	122	15
12	564	5	43	417	5	74	107	14
13	559	5	44	412	6	75	93	13
14	554	5	45	407	6	76	80	12
15	549	5	46	400	6	77	68	9
16	544	5	47	394	6	78	59	8
17	539	4	48	388	7	79	51	7
18	535	4	49	381	7	80	44	6
19	531	4	50	374	7	81	38	6
20	527	5	51	367	8	82	32	6
21	522	5	52	359	8	83	25	6
22	517	5	53	351	8	84	21	5
23	512	5	54	343	9	85	15	4
24	507	5	55	334	10	86	11	3
25	502	4	56	324	10	87	8	2
26	498	3	57	314	10	88	6	2
27	495	3	58	304	11	89	4	1
28	492	3	59	293	11	90	3	1
29	489	3	60	282	11	91	2	1
30	486	4	61	271	11	92	1	1

One half born lived to 25 years of age.

From theſe different Tables may be told the odds or probability of a perſon in health, and of any given age ſurviving a ſpecified number of years. For example, in the Breſlaw Table a perſon aged 25 has the odds of 560 to 7 of not dying in one year; for out of 560 of that age only 7 die in the year, as is ſeen in the third column. Again, that the ſame perſon aged 25 will live 10 years, ſee at the age of 35 how many are living, and how many have died from 25 to 35, the decrement is 77: it is therefore 490 to 77 that he lives 10 years. The ultimate proſpect of life is determined nearly in the ſame manner; for example, at 30 years of age are living 531, and between the years 57 and 58 this ſet is gradually reduced to one half: 27 or 28 years is therefore the probable proſpect of exiſtence for a perſon of 30 at Breſlaw.

OF THE CAUSES OF DEPOPULATION IN GREAT CITIES.

THE cauſes of depopulation in cities are ſo intimately interwoven with the ſubjects treated of in the three chapters of this work, that it would be unpardonable to paſs them over in ſilence: I ſhall aim to concentrate the ſcattered rays into a narrow focus. Great cities, if we exclude Rome and Conſtantinople, are of modern date in many kingdoms of Europe. In the ninth century, a few had been built in Germany; but in England corporations and conſiderable towns are poſterior to the Norman conqueſt. Even in the reign of Harry the Second, London contained only 40,000 inhabitants. Cities, aſſociated communities, and towns, during the religious fever of Cruſading, and after the termination of this epidemical diſtemper,

were

were Aſylums from Ariſtocratic tyranny; and when of a moderate ſize are ſeats of refinement, emulation, arts, and ſociety: but when overgrown, they check population, they are drains of the human ſpecies, and the graves of young infants. Wherever any city or town of conſiderable ſize afterwards doubles or trebles its inhabitants, of which there are thouſands of examples, that whole addition has been made from other towns, or from country diſtricts. The firſt great and univerſal cauſe of the depopulation in cities and large towns, muſt be imputed to their foul and turbid atmoſphere, and its poiſonous effects upon infants; to cloſe ſtreets, alleys, lanes, and habitations of the poor, where free ventilation and circulation of the air is obſtructed. In the conſtruction of theſe human hives, health and population has been criminally overlooked; but no one cauſe alone will account for their waſte, we can trace it to a multitude of ſources. In attempting therefore ſome illuſtration of this ſubject, which is abſolutely neceſſary to the clear underſtanding of the preceding and following chapters, my few deſultory obſervations will be pointed to the Britiſh metropolis.

LONDON

London bills by no means give an exact regiſter of births and mortality; they are intended to comprehend the births alone of thoſe belonging to the eſtabliſhed church, and the burials of ſuch only who are interred in the parochial church-yards: Jews, Quakers, Papiſts, and Proteſtant Diſſenters, are not included in the yearly chriſtenings, and great numbers of their burials, and burying places, not only of the diſſenting, but likewiſe of the eſtabliſhed church, are omitted; of the former 32, and of the latter 33, according to Short's liſt: the large, modern, and increaſing pariſhes of Pancras and Mary-le-bone, in one of which ſtands the Foundling-Hoſpital, are excluded from the bills. Maitland (1729, ſee his Hiſtory of London) diſcovered 181 religious congregations whoſe chriſtenings were not publiſhed; and 63 burying places in and contiguous to the metropolis, where 3038 were annually buried, but excluded from the regiſters. Six hundred abortive and ſtill-born, who have arrived at an age thought deſerving of burials, are ſet down to the deaths, but omitted in the liſt of births: young infants who die before baptiſm are alſo not regiſtered in the births.

I ſaid

I ſaid that none of the chriſtenings of the diſſenting ſects were included in the public regiſters, but ſeveral of them are buried according to the formalities, or at leaſt in the cemeteries of the eſtabliſhed church, which muſt increaſe the liſt of deaths. Another defect in the burials is, that numbers are carried into the country who are not accounted for: it is agreed that ſeveral hundreds more are annually carried out of, than brought into London for interment. Even in the pariſh returns there is, as I ſhall hereafter prove, too much reaſon to ſuſpect frequent omiſſions. The increaſe or decreaſe of religious diſſenting ſects muſt have conſiderable effect on the baptiſms and burials; and finally, the proportion of emigrants from London to the ſea and land ſervice, and to diſtant colonies, reſts upon conjecture—ſuch alas! are the imperfect and confuſed materials from which we form our calculations for the Britiſh metropolis. Dr. Price rates the preſent annual deficiency of the London burials at 6000, and of the births ſomewhat greater; neither of which are brought to account in the public regiſters: ſo that upon the moſt probable average, there is every year an exceſs of deaths above

the

the births, in this metropolis, of 5 or 6000: in the laſt 10 years, this waſte ſeems by the bills a little abated.

LONDON Bills at a medium annually.

Years	Chriſtenings	Burials
From 1671 to 1681	12325	19144
1681 to 1691	14439	22363
1691 to 1700	14938	20770
1700 to 1705	15758	21091
1706 to 1710	15489	21832
1711 to 1715	16204	22178
1716 to 1720	18019	25641
1721 to 1725	18828	26513
1726 to 1730	17578	28472
1731 to 1735	17517	25491
1736 to 1740	16145	27494
1741 to 1745	14419	25351
1746 to 1750	14496	25351
1751 to 1756	15119	21080
1759 to 1768	15710	22956
1770 to 1780	17218	21000

DAVENANT calculated the number of houſes in the metropolis and the county to be more numerous in the year 1690, than Dr. Price will admit them to be at preſent.—If London, before the beginning of this century, conſiſted of ſo many diſtinct though ſmall, compared to the preſent houſes, with ſeparate families, and at this time, the number of houſes are decreaſed 10, 15 or 20,000, with an *equal* number to each houſe, then

without doubt, contrary to the evidence of our ſenſes, we muſt believe the metropolis to have been more populous 80 or 90 years ago. One true fact ſeems to be, that the London inhabitants are now much more widely diſperſed, and to an immenſe extent, in ſmall villages, retirements and country houſes over all the different ſurrounding counties.

COMPARE the London births and burials of the laſt 30 years, with the 30 preceding; the deaths of late are greatly decreaſed in proportion to the births. Might not therefore this alledged diminution of population, from now finding a material decreaſe in the burials, and in a leſſer degree in the births, be accounted for, by ſuppoſing that formerly the city was cloſe confined and unhealthy, eſpecially to infants, that then too perhaps more breeders proportionally ſupported the metropolis. I admit, but merely for argument, that the bills have been kept correct. London ſtreets are now widened, the inhabitants live leſs crowded together, the houſes ſtand upon double or treble the ground which they formerly occupied, ventilation is freer, the city is more plentifully ſupplied with water and fuel, both extremely neceſſary in preſerving health, in preventing ſick-

neſs

neſs and infectious fevers originating from foul ſtagnant air, filth and uncleanlineſs; the ſtreets and foot-paths are better paved; ſewers and drains are made to carry off moiſture and corruption; there are many more country-houſes and agreeable outlets, if not in the ſame county, in the vicinity of London, where families and children may enjoy freſh air and exerciſe; the high roads round the capital, and throughout the kingdom, are greatly improved, and invite more to exerciſe; academies for the education of children are increaſed in the environs, and in the country; the better and middling claſſes of people at leaſt, drink leſs than formerly. In vain we look for any compliment to the ſtanding forces of Æſculapius, to modern diſcoveries and improvements in medicine. Calculators re-echo the decay of population and of inhabitants: they are nevertheleſs pleaſed to allot ſome ſubordinate degree of merit, to bricklayers, commiſſioners of ſewers, ſtreet paviours and ſcavengers.

Besides the pernicious effects of foul city atmoſphere upon young infants, and in a ſmaller degree upon grown-up perſons, particularly in ſickneſs; other cauſes conſpire to ſink the births beneath the ſtandard of the burials:

als: amongſt the moſt apparent I include fewer breeders in cities. Our own ſenſes and obſervation may here be conſulted in lieu of doubtful calculations. In proportion to the eaſy means of acquiring a moderate ſubſiſtence for children, the population in general will be accelerated: this was lately the happy condition of our North American colonies. Another reaſon which tends to increaſe country population is, that there, in the unmarried condition, life is a languid pilgrimage, and for a variety of reaſons, they enter into the ſtate of wedlock with fewer ſcruples: but in large and populous cities, men (and women if they chuſe) have unmoleſted opportunities of revelling in diſſipation and vice; in their younger days they are ſeduced by the deceitful allurements of courtezans, and until the fire of youth is ſomewhat blunted, are more averſe to early matrimony than thoſe placed in *remote* parts of the country, who are not yet infected with the manners of a corrupt metropolis: in theſe tranquil abodes, the mind is leſs debauched, and fewer opportunities preſent to indulge in licentious gratifications. The expences of a houſhold, and the proſpect of increaſed burthens, in providing

handſomely for a family, the difficulties again amongſt the lower and laborious orders in cities, of ſubſiſting, as the neceſſaries of life riſe in price, with the eaſy means of gratifying the ſenſual paſſions, all contribute their ſhare in London, and other great capitals, to diſcourage matrimony. Even amongſt the higher and middle orders where taxes are enormouſly multiplied, where ſhows, public amuſements, extravagance, and diſſipation are faſhionable, and one of the darling objects of gratification, where ſelfiſh intereſt and fruition are all part of the marked outlines and features of the nation, numbers of both ſexes are frighted from, or are inſenſible to, any charms in diſintereſted wedlock, and population is checked.

London and Paris contain multitudes of maids, batchelors, and profeſſed courtezans, uſeleſs drones, who add no increaſe to the common ſtock, in reſpect of procreation. The increaſe of the army and navy, of law, commerce, and private fortunes, and the commodious agreeable manner of travelling, draw numbers now to the Britiſh capital for occaſional buſineſs, pleaſure, or curioſity; more foreigners viſit us; the number of large houſes in London are multiplied, where we

may

may find a long train of unmarried domeſticks; all thoſe different deſcriptions of perſons, which probably are rather augmented, will have ſome effect in detracting from the annual proportion of births. On the other hand, by improvements in the roads the London inhabitants are now not ſo conſtantly reſident and pent up as formerly, which muſt affect both the births and burials. Probably, likewiſe, in cities, it is in ſome degree from the diſſipation, and incontinence of the married ſtate, that fewer children are produced than by country marriages; but the principal reaſon I imagine is, that in the latter, they enter earlier into matrimony, and afterwards perhaps, from the leſs expence of rearing and educating children, or from other cauſes, have fewer cloudy apprehenſions of over-ſtocking their houſe.

High refinement and large cities are obſtacles to population, ſo is a wild ſtate of nature. A few tribes of American Indians with difficulty find ſubſiſtence in a large tract of woody uncultivated country; the ſavage huſbands are cold inſenſible mortals; the allurements of dreſs, delicacy, and edu-

cation are alſo wanting to give a ſpur to the paſſions. In North America, the infants of the Indians are ſuckled ſeveral years, a practice not unfrequent amongſt the indigent in our own country to retard conception; and after nurſing two or three children, the period of propagation is almoſt finiſhed: the fatigues and perils which they are obliged to undergo in procuring ſubſiſtence, would not permit wandering Indians to ſupport two or three young infants at the ſame time. A medium ſtate between high refinement and rude ſavageneſs, is moſt favourable to population: in the country, and particularly in the back ſettlements of North America, they ſeek out early for a domeſtic partner, and breed a numerous progeny.

I FIND upon many occaſions, the propriety and force of Celſus's maxim, that medicine is a circle. An attempt fully to explain the cauſes which may with probability be concluded as acceſſary of late years to the diminution of mortality in London, is warped with medical queſtions, and with a general ſurvey of diſeaſes. We ſhould examine the effects upon different ages of a foul atmoſphere, of animal effluvia, of uncleanlineſs,

lineſs, of contagion, whether bred in jails or hoſpitals, or by filth in private houſes, of moiſt vapours emitted from the earth, and of the diet and liquors now conſumed. Before the beginning of the preſent century, very few vegetables were eat in London, and ſcarce any public gardens to rear vegetables had been planted round the city; the ſurge and decreaſe of diſeaſes, the ſtate of medicine, and diſcovery of new remedies, improvements in the nurſing of infants, particularly as to looſe dreſs and cleanlineſs, the modern and laudable inſtitution of public diſpenſaries ſhould all be taken into the account: theſe heads of inquiry would lead into a wide ocean, and are more cloſely connected with the matter of the following chapter.

Fresh air next to food, ſeems to be an element, the purity of which materially conduces to the health and life of young infants. By reſpiration alone, a gallon of air is one minute corrupted. The fatal conſequences of city atmoſphere upon ſuch delicate conſtitutions are univerſally notorious, even amongſt nations conſpicuous for ſobriety. The laborious claſs cannot afford time to carry

their infants out daily to the open areas and ſuburbs to breathe a little wholeſome air, or even to enjoy a neceſſary degree of exerciſe; myriads of them are either ſuddenly extinguiſhed in convulſions, or they pine away like young plants buried in a noiſome cellar. Perhaps too in great cities, more comparatively of the parents of young infants, have injured their conſtitutions by precipitate irregularities, fornications, and debauchery; their offspring we may conceive will be more debilitated and frail, than thoſe of ſtrong healthy parents, accuſtomed to induſtry, ſobriety, and regularity. The recovery likewiſe of infants from Small-pox, Meaſles, or any other ſickneſs, will be greatly checked and rendered more hazardous, by a thick atmoſphere of ſea-coal ſmoke, emitted, at leaſt in winter, from ſeveral hundred thouſand chimnies; contaminated beſides by animal reſpiration, perſpiration, and by innumerable other feculent vapours and mixtures.

NEXT to the mortality of infants, Dr. Price aſſumes it is an as eſtabliſhed propoſition, " that the *ſecond* great cauſe of depopulation " in London, takes place amongſt the new

" *annual*

" *annual ſettlers*, to whom the air, modes " of life, and debaucheries of the metropo- " lis, are particularly hurtful and pernicious; " and that (excluſive of their greater num- " bers) this is one of the principal reaſons " why the bills ſwell after 20 years of age."

THE annual waſte of London is ſuppoſed to require about 5 or 6000 recruits. The new ſettlers Dr. Price alledges to arrive chiefly from 20 to 40 years of age, and this afflux it is evident muſt ſwell the burials in that interval of life, by adding to the number of inhabitants, and raiſing the deaths above the due proportion, when compared to the mortality before 20. Certain it is, that numbers come from the country to London under 20 years of age, to ſerve apprentice-ſhips in trade, law, mechanical profeſſions, and as ſervants; but Dr. Price is of opinion, that they are more than counterbalanced by thoſe ſent out of the metropolis under puberty for education, to ſchools and univerſities: yet even on this ſuppoſition, which may well be diſputed, the polluted air of London ſhould exert its pernicious effects upon the young ſtrangers, much more than upon the original and half ſeaſoned inhabi-

tants arrived at the ſame years. A large part likewiſe of the annual recruits to London compoſed of natives and ſome foreigners, we muſt imagine have been born and reared in cities and towns, either as artizans, mechanics, or idle people. We have convincing proofs of this during the ſeptennial or general election of a new parliament. I am inclined to think, that Small-pox has ſome ſhare in increaſing the mortality of the new ſettlers. Were they to fall off according to the uſual annual decrement of perſons in this interval of life, that is at 2 or 3 per cent. the annual addition to the burials out of 6000 would amount only to about 200; and it is obvious by conſulting the preceding tables of Short and Birch, that ſuch ſmall addition would alone go but a ſhort way in accounting for the ſurge of mortality after 20 in London.

When we attentively reflect upon the exceſs of infant deaths under 5 years of age in London, and the ſmall number of breeders, a great ſurplus of deaths by new recruits will not be required to account for the London waſte. The majority of the new ſettlers will probably be unmarried perſons, who

do

do not ſo ſoon form matrimonial connections, as if they had remained in their original habitations, with their friends and acquaintances. The ſmall portion of breeders I before obſerved, was a principal cauſe why out of 9,000,000 of negroes exported to America, and the Weſt-Indies, 1,500,000 only now ſurvive.

London atmoſphere and debaucheries, I ſhall not deny, are fatal to a ſmall number of the new recruits; but after a year or two, men become habituated to great changes and diverſity of ſituation and climate; within that time, Europeans are tolerably well ſeaſoned, even in the Eaſt and Weſt-Indies. I apprehend that from 20 to 40 is univerſally a more mortal period, than from 10 to 20, though in a leſs ſevere degree in the country than in large cities; and in this reſpect, the bill of a pariſh in a ſmall country town, Northampton, given by Dr. Price, correſponds with London. From 18 to 35 and 40 is the principal conſumptive age amongſt both ſexes, inflammatory fevers and chronic diſeaſes begin to exerciſe their greateſt tyranny after puberty; debaucheries and irregularities are then moſt prevalent; the venereal

diſeaſe

diſeaſe is probably more fatal to London than to the reſt of the nation; in all pulmonary complaints likewiſe, and indeed in ſickneſs of every denomination, pure country air contributes eſſentially to the recovery.

Numerous cities, towns, and harbours, have been built upon low unhealthy ſituations, ſurrounded with hills or moraſſes; moſt cities ſeem to have grown up by time, accident, and chance; the ſtreets are irregular, and not ſufficiently pervious to ventilation, and the inhabitants crowded into too ſmall a ſpace: all theſe are objects of the firſt legiſlative magnitude in every nation. There are moderate ſized towns, and even country diſtricts ſo ill ſituated or unwholeſome, as to make the burials exceed the births; I need not travel to new uncultivated countries, or rank tropical climates for proofs. Dr. Short found, from their regiſters, ſome country towns of Norfolk, Eſſex, and ſome country diſtricts in the Iſle of Ely, before the moraſſes were drained, in this predicament. Few great capitals in Europe can be compared to London in healthy ſituation and other conveniencies; yet we may remark, that the comparative proportion of its burials

rials (if the regiſters of each can be relied upon) rather exceed thoſe of Amſterdam, which ſtands in the midſt of ſlime, mud and moraſſes. Cuſtom and habit we know ſeaſon men to unwholeſome climates and ſtations: but beſides, there are fewer people by one third in Amſterdam, the ſtreets are more regular and open to ventilation than the old buildings of London; there is alſo leſs luxury, licentiouſneſs, and profligacy to impede population.

DAVENANT calculates, that before the beginning of the preſent century, England and Wales contained 1,300,000 houſes and cottages. Dr. Price eſtimates the houſes and cottages now rather under 1,000,000. This certainly indicates an alarming depopulation in the kingdom. The ſubject however is more of a political nature, and of infinite extent: it is connected with the ſtate of government, of legiſlation, of religion, of foreign colonization, and of emigration to remote parts of the Empire; with trade, agriculture, the incloſure of commons, the monopoly of farms, and unequal diſtribution of property; with the frequency of wars, the increaſe of taxes, luxury and refine-

ment

ment in the higher and middling claſſes, and with all the cauſes before enumerated, which more or leſs diminiſh the national ſtock.

CHAP. III.

The Diſeaſes which annoy, and occaſion the principal Mortality amongſt Mankind; with a few Tables, each of equal Periods, 15 Years each, ſhewing by the London Bills, all the fatal Diſeaſes, Caſualties, and Deaths at every Age, in this Metropolis, during the laſt 105 Years, and which exterminated about 2,500,000 of the human Species: At the ſame Time exhibiting a diſtinct View of the Ratio of Mortality by each Diſtemper and Caſualty: Critical Reflections upon thoſe Diſeaſes and Caſualties, and upon the Bills, and upon the different Periods of Life at which each predominates: And concluding with a novel Attempt to form a groſs Eſtimate, of the Numbers annually deſtroyed by different Diſeaſes and Caſualties throughout Great-Britain and Ireland.

IN the preceding chapter it has been confirmed by mathematical demonſtration, that an inconſiderable handful of mankind ſurvive

ſurvive to 70 or 80 years of age; a few it is true have reached 100, or even 150, Jenkins lived to 165. It is alſo obſervable, that thoſe who enjoyed ſuch uncommon longevity, had no ſettled ſyſtematic rules of diet. In Bacon, Lord Verulam's hiſtory of long livers, both males and females, their climate, diet, manner of life, appetites, exerciſes, ſtudies, paſſions, habits, and diſpoſitions were exceedingly diſſimilar. Throughout Europe, Africa, Aſia, and America, the rich, the poor, the inhabitants of town and country, with very different climates, conſtitutions, complexions, nouriſhment, ſoil, and conveniencies, all ſeldom exceed the uſual term of life allotted in holy writ to man. Seventy or eighty is mentioned by Moſes, in the 90th Pſalm, as the ultimate goal of human exiſtence. The term is very ſhort, and we are all haſtening to the brink of our earthly duration. It would be unjuſt and fruitleſs to repine, ſeeing that ſo many " who ſet out with us in the journey have " been cut off. The awful period advances " by ſlow and imperceptible degrees: uni-

" verſal

" verſal ruin and the laſt blow, will come
" and cloſe us up in the grave."

I PROPOSE now, in imitation of the geographers, to lay out, and to review in one general map, the enormous brood of diſeaſes which diſgorge their virulence over the earth, and with frightful rapacity wage inceſſant warfare with mankind: by this means we ſhall, to uſe a military phraſe, reconnoitre more diſtinctly our enemies, and be led to make the beſt diſpoſition and preparation for defence where the greateſt danger is apprehended, and the moſt formidable aſſaults to be ſuſtained. Armed with diſeaſes, the grim king of terrors appears in the moſt hideous aſpect: under theſe various morbifick forms, I ſhall track him grappling with mankind, and with his tremendous ſcythe mowing down generations.

" SOME philoſophers conſider diſeaſes not
" as the original intention of nature, but
" that they are, without doubt, in general,
" of our own creation. That were there
" a country where the inhabitants led lives
" entirely natural and virtuous, few of them
" would die without meaſuring out the
" whole

" whole period of preſent exiſtence allotted " to them, pain and diſtempers would be " there unknown." This propoſition may be uſeful to encourage morality, but it will not bear a medical ſcrutiny.

In the rude ſtate of ſcience and medicine, it was uſual to aſcribe moſt diſeaſes to the immediate reſentment of ſome inviſible demon, or to divine diſpleaſure and chaſtiſement: learning and philoſophy in every country diſcarded ſuch ſupernatural agents. It is not more than two centuries ago, when the people of England could with difficulty be perſuaded that the jail diſtemper, communicated at the Oxford aſſizes from the priſoners to the ſpectators, was not kindled up by witchcraft. In the age of ignorance, ſuperſtition, and credulity, diſtempers were imputed to demons and necromancy; on this account, in all barbarous nations their phyſicians have been a ſet of ſtupid conjurors. Others again, equally err in ſuppoſing diſeaſes to be unſteady motions of the human machine, excited by ſomething hurtful: this popular error ſeems to originate from confounding diſeaſes themſelves with the practice of phyſick: they are each beyond diſpute preſented

to us over and over again, in nearly the ſame form and ſhape: the diſeaſes delineated 2200 years ago, by Hippocrates in Greece, at this day retain the ſame eſſential marks and prominent features; though in degree and violence, there unqueſtionably are gradations and ſhades which may vary the picture.

INFANT deaths every where furniſh a vaſt ſupply to the gloomy realms of Pluto; and this calamity is infinitely aggravated by the noxious atmoſphere of cities and towns. The diſeaſes of early infancy (Small-pox, Meaſles, and a few others excepted) are in the London bills, principally accumulated into two aggregate heaps, Convulſions and Teething; upon which I ſhall preſently animadvert.

PHYSICIANS have unanimouſly agreed, that the febrile claſs of diſeaſes, comprehending all the different genera in one tribe, are the moſt univerſal and fatal; but throughout all countries, in epidemical diſeaſes there are barren and fruitful years, when they are more or leſs prevalent. Great national calamities from epidemical diſtempers are rare, none are ever diffus'd over a whole kingdom,

(catarrh

(catarrh in a few rare inſtances, and caſes of general famine excepted) they ſometimes ſpread from province to province, but all are never attacked at once, nor probably are large populous kingdoms ever totally exempted from them. Fevers of different generic forms, as agues, remittent fevers, dyſenteries, malignant and infectious fevers, putrid ſore throat, Small-pox, meaſles, &c. may be local and circumſcribed to one city, or diſtrict, whilſt others in the vicinity continue healthy, the diſeaſe diſſipating its force within a ſmall boundary.

Dr. Short, from one hundred and fifty-one different pariſh regiſters, calculates that in a certain period ſome have had from eight to fourteen ſickly years, whilſt others in the ſame interval have had but one. Five, ſix, and eight years diſtance he eſtimates as a common period for the viſitation of epidemical ſickneſs, even in remote country pariſhes. In one of thoſe intervals it is uſual for Small-pox and Meaſles, excluſive of ſome other epidemics, to make their periodical circuits. By the country regiſters it appears, that a few pariſhes have had the good fortune to eſcape from any unuſual mortality,

during ten, twelve, and ſome few twenty, and even thirty years. In all the ſickly ſeaſons of country pariſhes, the burials exceed the chriſtenings, and according to the nature of the epidemic, and morbid ſtate of the ſeaſon, the mortality varies in degree. In the London bills we frequently obſerve, that in certain months the deaths riſe double or treble above equal periods of the ſame year.

Upon comparing the annual average of deaths in a ſickly year of London and other great cities, with ſickly years in country pariſhes, Dr. Short finds, that cities and towns in this reſpect have the advantage of the country. In large open country places where fatal epidemics broke out, according to this author, more died in one year, than during 6, 10, 12, or ſometimes even 15 years of health; whereas in London and ſuch cities, ſeldom above a third, fourth, or fifth beyond the ordinary conſumption are carried off. (The plague is certainly now and then an exception to this propoſition.) The Doctor adds, that mortality is more conſtant and regular in cities, and not ſo many deſtroyed "per ſaltum" from ſweeping epidemics as in

in the country. In pure open air he ſuggeſts, that contagion or other adulterated effluvia are more virulent: or perhaps he ſhould have ſaid, that in cities where the atmoſphere is charged with a load of heterogeneous vapours, emitted from fires and other effluvia, epidemical poiſons may be blunted, decompounded or annihilated. In cities too, human bodies may be more ſeaſoned and habituated to noxious impreſſions from this ſource: Doctors and Nurſes ſeem to be fortified by habit. Small-pox and Meaſles in particular, are conſtant reſidents in great capitals, and conſequently the decreaſe from theſe diſeaſes is more equal than in the country, where ſeveral years intervene between their periodical invaſions. At preſent I ſtudiouſly ſhun any prolix diſcuſſion of cauſes.

The principal and moſt general epidemics which infeſted England during two entire centuries, are enumerated in a ſhort ſyllabus, by Dr. Short. They are either plagues, agues, remittent fevers, ſpotted putrid fevers, ſlow fevers, ſummer and autumnal dyſenteries, peſtilential and contagious peripneumonies, ſmall-pox, meaſles, fatal ſpring pleuriſies, peripneumonies, and epidemical

catarrhs, all of the febrile claſs. De Haën computes, that out of 2000 ſick taken into the hoſpitals at Vienna, 700 laboured under acute diſeaſes, fevers of various kinds. Out of 5743 ſick, taken into Haſlar Hoſpital, at Portſmouth, by Dr. Lind's account, about 3000 were ill of fevers. Cleghorn eſtimates the ſummer fevers of Minorca to conſtitute 3-4ths of all the diſeaſes in that iſland. Lind calculates, that of all the numerous Europeans who viſit the ſultry climates of Africa, of America, of the Eaſt and Weſt Indies, 19 out of 20 who die in thoſe regions are deſtroyed by fevers and fluxes; and probably he ſhould have ſubjoined, or of chronic diſeaſes, the conſequence of thoſe fevers. The reader will preſently aſcend to a much more elevated proſpect of this ſubject.

The plague, a febrile demon, cannot at preſent be called one of the mortal epidemics of Europe, except in the South Eaſt extremity poſſeſſed by the Turks. The two greateſt peſtilences on record happened in the 6th and 14th centuries of our era, when millions over the globe were overwhelmed in one univerſal deluge of putrefaction. In London, before the general conflagration in

1666, the plague was very frequent; ſince that event, or at moſt 2 or 3 years after, it is extinguiſhed and unknown in this city. From 1592 to 1665, the plague appears from the bills, to have had annually more or leſs ſhare in the mortality of the metropolis. In 1665, which is the moſt furious plague in the London annals, the deaths amounted to very near 100,000, but in the 8 preceding years to 113 only. According to Dr. Hodges, this laſt infection was imported from Smyrna to Holland, and from thence to England. Regiſters in other parts of Europe ſhew, that this diſeaſe has committed direful havock. At Marſeilles, they reckon up 20 general plagues which have from time to time deſolated that populous city. Many cities and towns in different nations of Europe have ſeverely ſmarted by peſtilence, ſince our emancipation from this formidable tyrant. In the Mediterranean ports they are, from fatal experience, extremely vigilant to guard againſt infection. So late as 1743 and 4, the beautiful city of Meſſina, in Sicily, was almoſt entirely depopulated: 70,000 inhabitants were in a ſhort time exterminated by

the plague, which had been introduced by a few bales of infected goods clandeſtinely landed from a ſhip in the harbour.

FORMERLY the plague in London, and in moſt other cities, was rendered infinitely more terrible and deſtructive, by the injudicious internal regulations of police. It is evident by the London bills, that a mere handful at any time died in the Peſt-houſe; conſequently, every corner of the city was polluted with infection. If inſtead of immuring the ſick and ſound together in the ſame houſe, where the plague had broke out or was ſuſpected, they had inſtantaneouſly, as is the modern practice, removed them to proper houſes or lazarettos, deſtroying all their goods and materials capable of harbouring infection, the diſeaſe might have been ſoon extinguiſhed. Confining the whole family, ſick and ſound promiſcuouſly together for ſeveral weeks, until all were either dead or recovered, and with this forlorn motto on the door, "*Lord have mercy upon us,*" was a barbarous policy: many eſcaped in ſpite of their guards, or by means of a bribe, and ſpread the infection. This abſurd mode alſo effectually prevented an early alarm and diſcovery

covery of peſtilence, which as in caſes of fire, is of the firſt importance, and when it might have been ſuppreſſed with very little loſs. The filth and narrow crooked ſtreets of London in the laſt century, no doubt contributed to foſter and to propagate this exotic diſeaſe.

TRUE plague is now chiefly confined to Grand Cairo, and Alexandria, the two hot-beds and nurſeries of peſtilence; particularly the former crowded and filthy city, to many parts of Syria, to the European and Aſiatic coaſt, bordering on the Archipelago, to Conſtantinople, and to ſome maritime towns of Arabia and Perſia, which traffic by the Red Sea. About 2 years ago, Conſtantinople loſt 100,000 inhabitants by this ſingle diſeaſe. Their ignorance of philoſophy and ſtupid notions of irreſiſtible predeſtination, with other peculiar cuſtoms, ſubjects the Turks more than any other Mediterranean nation to peſtilential contagion. The plague now ſeldom gains admittance into other European ſea-ports, and even if imported to our ſhores, the wiſe precautions and regulations adopted by quarantines, check its irruption: this is a moſt important improve-

ment in the police of modern ſtates, for the original inſtitution and rough draft of which about 300 years ago, we are indebted to the Venetians. The internal ordinances, however, enacted to prevent the diſperſion of peſtilential infection, were, until the preſent century, extremely erroneous and impolitic. Fortunately for mankind, the infection of plague ſpreads to a very ſmall diſtance thro' the air, without ſome contact or adheſion to infected goods and porous materials, or by perſonal communication of the ſound inhabitants with the diſeaſed: a neighbour ſhutting himſelf up at a few yards diſtance from an infected houſe, may eſcape unhurt. If the contagion of plague could be ſo ſuddenly and widely ſcattered over a kingdom, as epidemical cartarrh or influenza, the earth in a few months would be converted into an enormous churchyard, and filled with dead corpſes.

NEITHER can the Sweating-ſickneſs be now conſidered as an epidemic cauſe of mortality. Somewhat more than 300 years ago, this ſingular and contagious diſeaſe broke out, for the firſt time, in the army of Harry the Seventh, on his return to Milford-Haven in Wales, from an expedition againſt France,

and

and in four hours ſickneſs numbers were ſnatched off: but if they kept warm in bed under profuſe ſweats, and ſurvived 24 hours, the danger was uſually ſurmounted. The ſame infection was brought back again to England at ſeveral ſubſequent intervals: happily its greateſt devaſtation was always of ſhort duration, and it has long ſince diſappeared from this iſland, and from Europe.

Amongst the univerſal febrile maladies, are thoſe Intermittent and Remittent fevers, of unwholſome tropical climates, particularly in the rainy ſeaſons, and of all woody uncultivated countries, placed under tropical heats, and abounding in moraſſes and ſwamps: in the ſultry ſummer, and autumnal ſeaſons of Europe, in low and marſhy ſituations more eſpecially, theſe are alſo the prevailing epidemics: armies in camps are at that time often grievouſly infeſted with them, and the dyſentery generally accompanies them. Over all the middle regions of the earth, from cancer to capricorn, intermittent and remittent fevers, and dyſenteric fluxes are the moſt general form of fevers: throughout this wide extended tract they may be called the locuſts, which devour

devour whole crops of mankind. They deſtroy not only numbers immediately, particularly of the new European ſettlers, but when improperly treated, or when convaleſcents fall into repeated relapſes, theſe fevers often terminate in chronic complaints, ſuch as dropſies, jaundice, viſceral obſtructions, ſwellings and ſcirrhus of the liver, and broken conſtitutions: relapſes into them are frequent through every ſeaſon of the year, upon premature expoſure to cold, hardſhips, or irregularities in living. Since the diſcovery of antimonials and bark, few now die of this fever compared to the number of ſick; but except conſumptions, ſmall-pox, and perhaps an infectious fever which I ſhall ſoon mention, it may be doubted, whether any other ſingle genus of diſeaſe, deſtroys more of the human ſpecies.

Even in moſt of the drieſt countries and ſituations, after a cloſe ſultry ſummer, and long continued heats, we often obſerve ſuch fevers and fluxes to enſue: the humours are then corrupted, and the ſolids relaxed; and in ſuch a diſpoſition of body, irregularities in diet, wet cloathes, and damp night air, may give riſe to fevers: but in ſuch ſituations they

are

are infinitely leſs frequent, and generally leſs characterized and fatal. It is true indeed, that in Minorca, where great part of the ſoil is dry and rocky, but the heat exceſſive, ſummer fevers and fluxes have raged with great ſeverity. In the rank equatorial regions, the remittent fevers are ſometimes ſo precipitate, as to kill in 1 or 2 paroxyſms, unleſs ſooner ſtopped; the doctor, lawyer, and prieſt quickly ſucceeding each other in their viſits. Without the dyſentery in conjunction, they are ſeldom contagious; even when ſtamped with livid ſpots, and the ſtrongeſt marks of putreſcency.

Authors have given various appellations to thoſe intermittent and remittent fevers, which are in eſſence the ſame, and cured nearly by ſimilar remedies: they are denominated tertian, ſemitertian, double tertian, triple tertian, hæmitritæa, amphimerina, autumnal epidemic fever, peſtilential tertian, marſh fever, camp fever, bilious, and gall ſickneſs, remittent fever of warm and tropical climates, putrid remittent fever, tertian fever, accompanied with ſeveral irregular ſymptoms, and from the ſymptoms moſt predominant and urgent, the fever has received different names.

Another fever varying conſiderably in ſymptoms and violence, is widely diſperſed over the earth; it is not ſo much governed or influenced by the ſeaſons or ſenſible qualities of the air, as the preceding and ſome other fevers, but in all countries may ariſe at every ſeaſon of the year, whether hot or cold, and like the plague or ſmall-pox, is often communicated by contagion, from one perſon to another, either by approaching too near the ſick, or through the medium of infected goods, cloaths and moveables. It is frequent in jails abounding in filth, filled with animal ſteams, and where free ventilation is excluded: it is frequent in large hoſpitals, particularly military hoſpitals during war, crowded tumultuouſly with ſick, with putrid ſores, mortifications, or with dyſenteries; and in ſuch caſes, hot weather will ſooner give it activity: it is very frequent, eſpecially if wet or ſtormy weather ſhould happen, and the hatches are then neceſſarily kept cloſe ſhut, on board of ſhips, ſquadrons and large fleets, particularly when haſtily fitted out: in cities we can frequently trace it to the priſons, perhaps ſometimes to the hoſpitals, to the houſes of the poor, to filth,

rags,

rags, ſqualid poverty, and adulterated air. Cities and towns, alſo for obvious reaſons, ſeem to be more expoſed to it than the country. Authors call it jail fever, hoſpital fever, putrid malignant fever, ſpotted and petechial fever, infectious fever, &c. Some, not without foundation, have ſurmiſed, that ſlow nervous fevers are in general derived from the ſame origin, and that they differ in degree only from the former: ſpots on the ſkin are by no means conſtant ſymptoms, but when they appear, they point out the diſeaſe more unerringly, and its greater malignity. The ignorance of the ſearchers in medical matters, prevent us from determining the preciſe mortality by this genus of fever in London.

Putrid ſore throat, a ſpecies of malignant infectious fever, has been called plague, with carbuncle in the throat reſembling buboes in the groin. Its mortality is not confined to any ſeaſon of the year, but although the fever is extremely precipitate and fatal to thoſe whom it ſeizes, particularly children, it ſeldom extends over a large tract of country; a ſingle city, or a province at moſt, bounds its malignity. The revolutions of this infectious diſeaſe are irregular and uncertain. In 1748, a conſiderable number

in

in this country fell victims to putrid ſore throat: ſcarlet fever is very generally connected with it—in the London bills I ſuſpect that they rate its mortality rather too low, and I imagine it is ſometimes confounded with putrid, ſcarlet, ſpotted, and malignant fevers.

ANOTHER very different order of fevers, both in their nature and cure, are the Inflammatory. The ſimple Inflammatory is one genus of this tribe, whoſe mortality is trifling compared to ſome of the former fevers: it is commonly complicated with ſome topical pains and inflammation; and then is properly diſtinguiſhed as a different genus. Pringle obſerves, that in military camps, Pleuriſies and Peripneumonies, two rapid and dangerous diſeaſes, accompanied with local or topical inflammations in the lungs, are the moſt frequent forms of fever with inflammation, and next to thoſe acute Rheumatiſms. The majority of theſe fevers originate from colds, and prevail moſt in the winter and ſpring, and in rigorous ſeaſons, or where cold and moiſture predominate, and are infinitely more general in the cold northern, than in the ſouthern and tropical climates.

Next to the lungs, the liver ſeems to be more ſubject to inflammation than any other internal viſcus:—in the Eaſt-Indies it is a very frequent diſeaſe, but in this iſland, and in moſt parts of Europe, it is, compared to the preceding inflammations, rare.

In the ſouthern climates of Europe, and moſt certainly over all the equatorial regions, intermittent, remittent fevers, and fluxes deſtroy the greateſt numbers: without the tropics alſo, in the marſhy countries of Hungary and Italy, where the ſummers are long and intenſe, and in that great northern moraſs, Holland, theſe fevers often make dreadful deſolation. Fevers with inflammation, and the bilious remittent, are greatly regulated, not only by climates and latitudes, but alſo in the ſame country by the different ſeaſons of the year. In ſummer and autumn fevers tend in various gradations to affect the ſtomach and bowels with ſickneſs, they then become more or leſs remittent, and leſs of an inflammatory nature. In Holland (ſays Pringle) towards June, a healthy month, the inflammatory fevers begin to recede, and the bilious, putrid, or remittent, often ſucceed through the

the ſummer and autumn, until the return of winter, when the inflammatory again recommence, the ſeaſons and diſeaſes inſenſibly intermixing and running into each other.

THESE few preliminary and general obſervations, will render the ſubſequent Tables of the London diſeaſes and the criticiſms more intelligible: the relative mortality of all deadly diſeaſes and caſualties, at leaſt in this metropolis, is the future object of this eſſay, and is reduced in ſome meaſure to mathematical exactneſs.

I COULD have exhibited tables with the diſeaſes and mortality of the laſt century, in London, from 1629 to 1670; but for a great part of that time the metropolis was inſignificant in ſize compared to its preſent magnitude, 23 new pariſhes have ſince been gradually added to the bills: there is alſo a hiatus of 10 years, in which the regiſters of diſeaſes are loſt: again, London until 1665 and 66, was infeſted with the plague, which diſeaſe, previous to that date, ſeems to have been one primary object of the bills; and to adopt Graunt's and Dr. Short's ſentiments, the regiſters, from various political and religious obſtacles, were then very negligently managed. The kingdom,

during

during the early part of this interval, was diſtracted with civil war, which ended in the beheading of King Charles; and after the great peſtilence in 1665, London muſt have required ſome few years to recruit. For theſe and many other reaſons, I formed *five* regular tables only of diſeaſes in the preſent century, when London is more ſtationary in numbers, and more populous than at any preceding period of equal duration: by this means the actual and comparative magnitude, riſe, or declenſion of different diſeaſes, will be more conſpicuous in each table; and by proportioning the mortality to the population, we are enabled, with certain precautions and exceptions, to make the diſeaſes and caſualties of London ſerve as a morbid barometer to the whole nation.

Had I attempted to form ſimilar tables for even the latter part of the laſt century, the reader would have been embarraſſed to no purpoſe, and ſuch an attempt muſt ever prove abortive. For example, in one and the ſame title, are often intermixed in the regiſters of mortality, flox, ſmall-pox, and meaſles; conſumptions and tiſſick; cancer, canker, and thruſh, and ſometimes wolf, cancer, gan-

grene, and fiſtula, or cancer, gangrene, fiſtula, and mortification: additional ſpecimens of their abſurdity, and of the groſs ſtupidity of the ſearchers and regiſtering clerks, are gout and ſciatica; vapours and water in the head; quinſey and thruſh; teeth and worms; ſores, ulcers, bruiſed and broken limbs; cough, cold, and chin-cough. Notwithſtanding this rabble of diſeaſes, in commenting upon the bills of the preſent century, I have referred back, and have contraſted the majority of them with the bills of the laſt 30 years, in the preceding century; ſo that as near as the imperfection of the materials would admit, the mortality of 105 years in London is exhibited, and at one view preſents all the acute, the chronic diſeaſes and the caſualties which deſtroyed about 2,500,000 of the human ſpecies. Where no conſiderable difference appeared in the diſeaſes and mortality of each 15 years interval of the 30 in the laſt century, I added the two together to prevent unneceſſary arithmetical multiplication, and it is eaſy to divide 30 into two equal parts: or if we wiſh to know the annual deſtruction by each diſeaſe in the metropolis, there is no difficulty in dividing that diſeaſe in 15 equal portions.

SEVERAL authors on bills of mortality have obſcured their works in a cloud of arithmetick and calculation: the reader muſt have no ſmall portion of phlegm and reſolution to follow them through with attention; they often tax the memory and patience with a ſuperfluity of figures, even to a nuiſance. Thoſe who will peruſe the following *five* tables with attentive curioſity, would have been ſtartled at the voluminous ſight of their detached contents in 105 ſeparate pages. Another very particular and important meaning I have in view, in forming each table of London diſeaſes and caſualties for *fifteen* years, in preference to any other number, is, that the *annual* havock by *ſimilar* diſeaſes and caſualties throughout Great-Britain and Ireland, may be computed with ſome probabilty, by each *fifteen* years mortality in London. Multiply 600,000 by 15, the product is 9,000,000.

THE Diſeaſes, Caſualties, and total Deaths, by the London Bills of Mortality during *fifteen* years, beginning from 1701, and ending with 1716.

Chriſoms	850	Cholick -	1360	Riſing of the Lights	1219
Infants —	315	Twiſting in the Guts	125	Spleen —	42
Head mould-ſhot -	386	Bloody Flux	133	Vapours —	11
Water in the Head -	223	Gripes in the Guts -	12183	Child-bed	3560
Convulſions	91660	Looſeneſs -	181	Evil —	1020
Teeth -	18478	Vomiting -	161	Læproſy -	19
Thruſh —	839	Flux —	178	French-pox	917
Rickets —	3916	Worms -	697	Scurvy —	83
Chin cough	63	Bleeding -	87	Raſh —	77
Small-pox	22219	Diabetes -	37	Scald Head	9
Meaſles -	1972	Apoplexy	1154	Inflammation -	8
Ague —	86	Suddenly	1074	Impoſthume	790
Fever -	49189	Lethargy -	105	Mortification	937
Purples -	189	Megrims -	13	Gangrene	136
Spotted Fever —	1498	Palſy —	332	Fiſtula -	360
Scarlet Fever	54	Head-ach —	21	Sores and Ulcers -	695
Malignant Fever —	15	Lunatic —	412	Cancer -	1041
Pleuriſy —	384	Dropſy -	11420	Canker -	138
Quinſey -	226	Tympany -	206	Burſten -	75
Rheumatiſm	368	Liver-grown	76	Ruptures -	235
Conſumptions —	42541	Jaundice -	1261	Wen —	5
Cough —	56	Gravel and Strangury	66	Swelling -	6
Aſthma —	424	Stone —	721	White Swelling —	5
Tiſſick -	4660	Gout —	313		
		Stoppage of the ſtomach	4139		

CASUALTIES in the above period.

Self-murder	445	dents -	828	Poiſoned -	2
Murdered	135	Drowned	907	Over-laid	817
Stabbed and killed by a ſword	15	Burnt -	90	Surfeits -	685
		Scalded -	19	Exceſſive Drinking —	19
Killed by falls, bruiſes, and ſeveral acci-		Stifled and ſuffocated -	13	Found dead	388
		Frighted	8	Executed ——	

Abortives 1436. Still-born 7318. Aged 27,341.

The Diſeaſes, Caſualties, and total Deaths, by the London Bills of Mortality during *fifteen* years, beginning with 1717, and ending with 1731.

Head-mould-ſhot, horſe-ſhoe head, and water in the head	2374	Aſthma and tiſſick	7938	Gravel, ſtone, and ſtrangury	868
Infants and chriſoms	606	Cholick	1473	Gout -	645
Convulſions	14718	Twiſting of the guts -	356	Stoppage of the ſtomach	2557
Teeth -	25199	Griping in the guts -	9203	Riſing of the lights -	1239
Thruſh - -	1191	Vomiting	386	Spleen -	52
Rickets	1383	Vomiting and looſeneſs	92	Child-bed	3894
Hooping cough and cough	632	Looſeneſs -	682	Evil -	519
Small-pox	34448	Flux —	200	Leproſy -	53
Chicken-pox	12	Bloody Flux	248	French-pox	1372
Meaſles -	2618	Worms -	662	Scald-head	15
Ague -	198	Bleeding -	69	Scurvy -	28
Fever -	51998	Diabetes -	48	Raſh -	128
Spotted fever, ſcarletfever, malignant fever, and purples	1332	Apoplexy and ſuddenly	3013	St. Anthony's fire	73
Pleuriſy -	602	Lethargy -	126	Inflammation	67
Quinſey -	169	Megrims -	10	Impoſthume	624
Rheumatiſm	447	Palſy -	550	Gangrene, and mortification	2857
Cough -	123	Head-ach & pain in the head	32	Cancer -	1059
Conſumption	49680	Lunatic	513	Canker -	181
		Grief —	210	Sores and ulcers	485
		Dropſy	15276	Fiſtula -	202
		Tympany	154	Burſten and rupture -	309
		Liver-grown	95	Swelling—	
		Jaundice -	1793		

Casualties in the above period.

Self-murder, or made away with themſelves	667	bruiſes, fractures, & various accidents	917	Bit by mad dogs and cats	3
Murdered	109	Drowned	1193	Over-laid	1180
Stabbed, killed with a ſword, wounded, and ſhot	32	Burnt -	54	Surfeit -	131
Killed by falls,		Scalded & burnt	36	Exceſſive drinking -	267
		Smothered and ſuffocated	34	Starved -	17
		Frighted -	14	Found dead	557
		Poiſoned -	7	Executed—	

Abortives 1230. Still-born 9001. Aged 34,708.
Bed-ridden 104.

THE Diſeaſes, Caſualties, and total Deaths, by the London Bills of Mortality, during *fifteen* years, beginning with 1732, and ending with 1746.

Head-mould-ſhot, & water in the head	2013	Cholick, gripes, and twiſting of the guts	3739	the ſtomach	2286
Convulſions	11966	Bloody Flux	167	Riſing of the lights	197
Teeth	20274	Vomiting and looſeneſs	248	Spleen	20
Thruſh	1512	Worms	161	Child-bed	3412
Rickets	954	Bleeding	57	Miſcarriage	47
Cough, and hooping cough	1692	Diabetes	19	Evil	426
Small-pox	29462	Apoplexy and ſuddenly	3287	Leproſy	69
Meaſles	2858	Lethargy	116	Scald-head	29
Ague	82	Palſy	621	French-pox	1663
Fever, malignant fever, ſcarlet, ſpotted, and purples	57595	Lunatic	777	Scurvy	14
Pleuriſy	811	Head-ach & pain of the head	6	Itch	42
Quinſy	287	Dropſy and tympany	16036	Raſh	47
Rheumatiſm	310	Liver-grown	75	St. Anthony's fire	36
Conſumptions	66009	Jaundice	2032	Inflammation	698
Aſthma and tiſſick	9460	Gravel, ſtone, & ſtrangury	710	Impoſthume	381
		Gout	765	Mortification	3362
		Stoppage of		Cancer	774
				Canker	123
				Sores & ulcers	402
				Fiſtula	210
				Burſten and ruptyre	304
				Swelling	47

CASUALTIES in the above period.

Self-murder	693	Drowned	1444	and cats	14
Murdered	147	Burnt	90	Over-laid	1293
Stabbed	13	Scalded	45	Surfeits	59
Killed by falls, bruiſes, fractures, and various accidents	936	Smothered and ſuffocated	62	Exceſſive drinking	678
		Frighted	8	Starved	96
		Poiſoned	7	Found dead	668
		Bit by mad dogs		Executed—	

Abortive and Still-born 8793. Aged 30,058.

THE Diſeaſes, Caſualties and total Deaths, by the London Bills of Mortality, during *fifteen* years, beginning with 1747, and ending with 1761.

Head-mould ſhot, horſe-ſhoe head, & water in the head	1022	Aſthma and tiſſick	5699	Stoppage of the ſtomach	304
Convulſions	85196	Cholick, gripes, and twiſting of the guts	1475	Riſing of the lights	39
Teeth	13978	Bloody Flux	94	Child-bed	3005
Thruſh	1391	Flux	252	Miſcarriage	56
Rickets	212	Vomiting and looſeneſs	134	Evil	197
Cough, and hooping cough	2755	Worms	115	Leproſy	39
Small-pox	29165	Bleeding	70	Scald-head	22
Meaſles	3099	Diabetes	16	French-pox	997
Ague	99	Apoplexy and ſuddenly	3271	Scurvy	59
Fever, malignant fever, ſcarlet, ſpotted, and purples	45621	Lethargy	105	Itch	31
Pleuriſy	407	Palſy	1021	Raſh	59
Quinſy	214	Lunatic	1126	St. Anthony's fire	63
Sore Throat	92	Grief	87	Inflammation	894
Rheumatiſm	175	Dropſy	13376	Impoſthume	191
Conſumptions	61729	Tympany	34	Mortification	3083
		Liver-grown	23	Cancer	682
		Jaundice	1729	Canker	77
		Gravel, ſtone, & ſtrangury	421	Sores and ulcers	253
		Gout	803	Fiſtula	134
				Burſten and rupture	163
				Swelling	49

CASUALTIES in the above period.

Self-murder	555	Burnt	127	Over-laid	414
Murdered	71	Scalded	51	Surfeit	31
Killed by falls, bruiſes, fractures, & various accidents	1084	Smothered and ſuffocated	90	Exceſſive drinking	189
Drowned	1718	Frighted	13	Starved	53
		Poiſoned	24	Found dead	336
		Bit by mad dogs and cats	15	Executed —	

Abortives and Still-born 8820. Aged 25,109. Bedridden 56.

THE Diſeaſes, Caſualties and total Deaths, by the London Bills of Mortality, during *fifteen* years, beginning with 1762, and ending with 1776.

Head-mould-ſhot, horſe-ſhoe head, & water in the head	337	Conſumption	68949	Stoppage of the ſtomach	179
Convulſions	89221	Aſthma and tiſſick	6154	Riſing of the lights	10
Teeth	11918	Cholick, gripes, and twiſting of the guts	796	Child-bed	3186
Thruſh	1101	Bloody Flux	93	Miſcarriage	49
Rickets	194	Flux	341	Evil	198
Cough, and hooping cough	4252	Vomiting and looſeneſs	120	Leproſy	15
Small-pox	36276	Worms	56	Scald-head	—
Chicken-pox	39	Bleeding	114	French pox	1016
Meaſles	3319	Diabetes	5	Scurvy	42
Ague	109	Apoplexy and ſuddenly	3353	Itch	11
Fever, malignant fever, ſcarlet, ſpotted, and purples	48594	Lethargy	74	Raſh	24
Pleuriſy	321	Palſy	1020	St. Anthony's fire	69
Quinſy	143	Lunatic	1048	Inflammation	1394
Sore throat	166	Grief	77	Impoſthume	84
Rheumatiſm	128	Head-ach	18	Mortification	3023
Cold	56	Dropſy	14038	Cancer	719
		Jaundice	2089	Canker	61
		Gravel, ſtone, & ſtrangury	429	Sores and ulcers	236
		Gout	1010	Fiſtula	119
				Burſten and rupture	140
				Swelling	37

CASUALTIES in the above period.

Self-murder	519	Drowned	1781	and cats	6
Murdered	77	Burnt	132	Over-laid	95
Shot	10	Scalded	40	Surfeits	27
Killed by falls, bruiſes, fractures, & various accidents	1065	Smothered and ſuffocated	68	Exceſſive drinking	69
		Frighted	2	Starved	57
		Poiſoned	10	Found dead	133
		Bit by mad dogs		Executed	—

Abortives and Still-born 10,241. Aged 22,032. Bed-ridden 115.

CONVULSIONS form a dreary catalogue of aſtoniſhing magnitude in the London funerals; and are principally noxious to infants under 2 years of age. Convulſions and teething are terms too indefinite. Every infant diſeaſe, not immediately obvious to the ſenſes, is thruſt into thoſe two articles by the ignorant ſearchers. From pains, acidities, and diſorders of their ſtomach and inteſtines, which are extremely delicate and irritable, convulſions frequently enſue: in cutting teeth too infants may die convulſed. If we conſider the term ſcientifically, convulſions, in numerous caſes, convey no more intelligence of the diſeaſe, than if they had ſaid the child died from want of breath. Chriſoms and infants (who die in the firſt month after birth) ſince the year 1726, are intirely left out of the bills, and are now ingulphed in convulſions.

WHETHER the increaſed conſumption of ſpirituous productions, imported from our Weſt-India iſlands and other countries, and ſwallowed undiluted by many of our laborious ranks of ſuckling mothers and nurſes in London, has operated to the great extent

tent uſually imagined, in augmenting infant mortality and convulſions, may on ſeveral accounts, be doubted. Towards the middle of the fourth table, that is about 1750 and 51, the uſe of ſpirituous liquors and gin was notoriouſly prevalent in the metropolis, as can be proved by the Exciſe books; yet upon comparing the births in that table or interval with the mortality by convulſions and teething, the latter diſeaſes ſeem to have decreaſed. It is neceſſary to contraſt the deaths by convulſions and teething with the chriſtenings, for if more children are born, more ſhould be expected to die in infancy; and in this way alone the augmentation or decreaſe of theſe two diſeaſes ſhould be determined. Again, the French, Italians, and Spaniards, both men and women, are remarkable ſober nations, but upon due examination, infant deaths in Paris, Rome, or Madrid, would probably be found not far inferior in proportion to their numbers and population to London. Tea in this country at preſent is an article not merely of luxury, but of ordinary diet amongſt almoſt every rank, eſpecially in cities and towns; more alſo of that malt liquor,

called

called porter, is ingurgitated in London: has the general propenſity for theſe two articles no effect in diminiſhing dram drinking and convulſions? I lament and acknowledge not only the indecency, but likewiſe the atrocious criminality of the practice; my meaning is only to repreſent it as an evil, vaſtly ſubordinate in its noxious effects to the poiſonous atmoſphere of cities.

Another circumſtance overlooked, ſo far as I know by the different calculators and criticks on the ſubject of infant diſeaſes in London, is this: cholic and gripes of the guts in the firſt table, amount to 13668, but continue through every table to decreaſe, and in the laſt or fifth table they dwindle to 796 only. What is underſtood by this complaint, gripes of the guts; is it dyſentery? Bloody-flux, we obſerve, makes a ſeparate article in the bills. Are the two diſeaſes confounded together in the ſearchers reports? May we not ſuppoſe, that ſeveral infant diſeaſes and deaths were formerly crowded into cholicks and gripes? I am aware that in reply it will be ſaid, that drains, ſewers, drier lodgings, leſs damp, and change in diet, particularly the more general uſe of

fermented liquors and vegetables, have diminiſhed dyſenteric diſeaſes in this city; that Dr. Sydenham likewiſe deſcribes an autumnal dyſentery annually prevailing in London, and uſually about two months in duration, during the years 1670, 71 and 72: ſtill I ſuſpect that a number of infant deaths have been crammed into this article; for going back into the bills of the laſt century, the deaths under this title are enormouſly great: proceeding backwards from 1700 to 1685, in 15 years, gripes of the guts amount to 28226, and from 1685 back to 1670, 15 years alſo, to 41573. In each of theſe laſt intervals too, Bloody-flux, Scowering, and Flux, make ſeparate titles, and conjointly amount in 30 years to 1690, and Cholick and wind to 2374. Now we know that vomiting, acidities in the ſtomach, Cholick and griping of the guts are extremely frequent and tormenting diſeaſes of infants, from which they often die convulſed. I cannot think that dyſentery alone deſtroyed altogether ſo many in London; and if my ſuſpicions are well founded, it will detract from the oſtenſible magnitude of convulſions in the preſent century, in which article many

deaths

deaths formerly laid to gripes in the guts, are probably ſwallowed up, and have deceived calculators.

Teething deaths muſt happen between ſix months and about two years of age: ſome children do not begin to cut teeth before the ninth or tenth month; but it is ſeldom ſo late as three years, before the firſt ſet are all protruded. In forcing with difficulty through the tender gums, they often excite exquiſite pain, fever, and ſometimes convulſions.

How many of the mortal Thruſh caſes affected infants and adults? In all probability, infants, very ſhortly after birth, were the greateſt ſufferers: Thruſh almoſt never ſeizes adults, but as a ſymptom amongſt many others of fever. In ſome rainy years, and marſhy countries, during a wet and warm ſummer, this diſeaſe is much more epidemical and frequent; but in the ſouthern climates thruſh is a rare diſtemper: when of a malignant ſort, numerous round ulcers cover the tongue, and line the mouth and inteſtines, terminating in ſucceſſive layers of tenacious ſhining, and in the worſt ſpecies, black cruſts. Is canker only a different name for Thruſh? I am dubious; but inclined to think they denote the ſame diſeaſe.

Cough and Hooping-cough has increaſed with aſtoniſhing havock: is the Croup a rare diſeaſe added to Chin-cough? are any other different pulmonary complaints, under the title of cough, intermixed with this teazing, and often epidemical diſeaſe, ſo peculiar to infancy and childhood? Luckily, like Small-pox and Meaſles, it attacks the ſame perſon but once in life.

Ricketty deaths from 1670 to 1701 amounted to 11415, whereas in the laſt table of 15 years in the preſent century, they ſhrink to 104. Does this indicate more maternal attention, and alſo more propriety in the ſuckling and rearing of infants? or has the diſeaſe actually withered? Is implicit reliance to be placed upon the ſearchers reports in diſcriminating this diſeaſe? Is it ever confounded with convulſions? In the interval from nine months to two years of age, rickets commonly make their appearance, beginning with leanneſs, muſcular weakneſs, large head, and prominent belly; and terminating, if not cured, in death, or in curvature of the bones, and deformity.

After devoting an intire chapter expreſly to Small-pox, nothing more will be expected from me on that head. The deaths

from

from Meaſles are generally to thoſe of Small-pox, in the ratio of 1 to 10, 11, and 12. Few eſcape this diſeaſe in infancy or childhood, and as we find 1-10th fewer to die of Meaſles than of Small-pox, we may conceive the blanks of the former as 1 of 60. Sydenham long ago obſerved, that the Meaſles, *if* ſkilfully treated, are attended with little danger: he ſhould at leaſt have added immediate danger; for in their future conſequences, Meaſles, eſpecially in cities, are not without hazard, and are not unfrequently followed by hectics.

VERY few now die of Ague in London: towns in general are leſs harraſſed with this diſeaſe than country places. Pringle remarks, that during the campaigns of the Britiſh troops in the marſhy countries of Flanders and Holland, where agues and remittent fevers from moiſt and putrid vapours are ſo frequent, the ſoldiers quartered in towns kept freer from thoſe diſeaſes, than the troops detached in country cantonments: the fires, ſewers, drains, and paved ſtreets, prevented an exuberance of moiſture; and if the men ſlept in the upper part of the houſe, they were more ſecure from ſickneſs. Agues generally tyrannize in ſpring and autumn, and

in

in theſe different ſeaſons, different modes of cure are required. The vernal agues, and thoſe occurring in the beginning of ſummer, are of a mild nature; thoſe of Auguſt and the autumnal are more obſtinate and dangerous, and ſometimes terminate in jaundice, dropſies, or conſumptive emaciations.

In the preceding century, Ague and Fever were joined together, and Spotted Fever and Purples in a ſeparate parcel; their proportion of mortality in 30 years, from 1670 to 1701, were as follows: ague and fever 87645, ſpotted fever and purples 5744.—From 1699, fever, malignant fever, ſcarlet, ſpotted fevers, and purples, have all been promiſcuouſly included in one title; and it is equally impoſſible from this indiſcriminate crowd, to determine either the ſpecific nature or genus of theſe febrile diſeaſes, or the reſpective fatality of each. How many of them were ſimple Inflammatory Fevers, and how many were accompanied with topical inflammations in the lungs, called Pleuriſy and Peripneumony, to which may be added the inflammation of the Diaphragm: how many were ſummer Bilious, or autumnal Remittent Fevers; and finally, how many were of the Malignant infectious, or the ſlow Nervous

tribe?

tribe? All muſt be ſought for in this miſcellaneous group; there is no other magazine where they can be heaped up. As to the mortal fevers of women ſhortly after delivery, they fall under a future article, Childbed.

I WISHED to determine, if poſſible, with ſome degree of authenticity and probability, as I have done in Small-pox, Meaſles, Childbed, and ſeveral other diſeaſes, the magnitude of havock in London by each of the different genera of fevers. I knew that moſt of our hoſpital regiſters were in this particular part defective; on that account I applied to Dr. Sims, one of the three able phyſicians who ſuperintend the Alderſgate Diſpenſary; where by private ſubſcriptions of the humane and charitable, the poor and laborious ranks are ſupplied with advice and medicines, and when neceſſary, attendance at their own houſes. Dr. Sims, with great affability, procured me the books and regiſters of this charity during ſix years, from October 1774 to October 1779, and in them I peruſed over the diſeaſes of 29,511 ſick, who in that period had applied for medical or ſurgical advice: but though no gentlemen are better quali-

fied to diſcriminate and cure diſeaſes, yet in the buſtle and haſte of preſcribing for ſuch multitudes daily, I found that too often the genus of fever was not marked, but only by the general outlines or claſs *febris*. This laborious ſearch therefore to my regret proved unſucceſsful; except that in aſcertaining the reigning proportions of ſome female complaints, not mentioned in the London bills, I converted it to ſome uſe and advantage, as will afterwards appear.

It would be of the utmoſt importance to mankind, and to this city, could we compute the proportion of devaſtation by the different genera of fevers. Is it probable that in London, and ſtill more ſo in the country, but above all in the northern parts of the kingdom, that winter and ſpring inflammatory fevers deſtroy more than the ſummer bilious, and autumnal remittents? The moſt intricate queſtion is to know, how many are cut off by Infectious, Malignant, and by ſlow Nervous Fevers? I believe, that fevers from this ſpecies of infection, are much more deſtructive than is generally ſuppoſed: their treacherous mildneſs, often at the attack, has, in innumerable inſtances, deceiv-

ed

ed practitioners. Independent of antimonials, bark, and blisters, remedies of sovereign energy in such infectious fevers, we know that jail infection, and even that of Small-pox, can be annihilated by fire and smoke confined a proper length of time; the heat of a baker's oven continued twelve hours, extinguishes these noxious poisons when concentrated in woollen, or any other porous materials.

The mortality by Pleurisy and Peripneumony, is totally obscured in the London bills, and I conceive is greatly under-rated. Haller and Morgagni's dissections, prove them to be only different degrees of the same disease. They chiefly prevail after puberty, and in vigorous athletic constitutions, are extremely precipitate, especially the true peripneumony; a few days suffered to elapse without skilful advice, or without a prosperous crisis by the precarious efforts of nature, the event is often rapid and fatal, or at the best lingering and unfortunate. Even in the southern climate of Minorca, where, in the coldest seasons, ice is an uncommon appearance, the Pleurisies and Peripneumonies of winter and spring often make great destruction, and require profuse blood-letting.

SIMPLE inflammatory Quinſy, if early advice is had, and it is treated with any tolerable ſkill, commits but petty depredations: are any caſes of putrid ſore throat confounded with quinſy? The true inflammatory quinſy generally invades between the ſpring and ſummer, particularly when the weather is then unuſually cold. Under this genus of guttural inflammation, may alſo be arranged a moſt precipitate ſpecies, where the top of the wind-pipe and glottis are alone inflamed, but without any external ſigns of quinſy: happily this dangerous ſpecies which threatens haſty ſuffocation, is very rare.

RHEUMATISM may be ſuppoſed to comprehend every ſpecies of this diſeaſe, whether febrile or chronic. Though a very frequent torment, it is in general rather a painful and obſtinate anguiſh, than dangerous to life; I ſpeak comparatively only. Adults, and thoſe advanced in years, are chiefly ſubject to rheumatiſm; and above all, ſoldiers and ſailors during war, when they are expoſed to heats and colds, to wet clothes, and cold quarters.

CONSUMPTIONS make a moſt awful appearance in the London funerals. How many of the true pulmonary conſumption, or phthiſis, were included in this catalogue, is difficult

difficult to gueſs; but from the concurrent teſtimony of phyſicians, and of experience, we may ſafely affirm a very large proportion: there are few families in this kingdom, whom it has not one time or other plunged into tears and diſtreſs, and deprived of relations or friends, multitudes of them nipped in the florid bloſſom, or in the full ripeneſs of beauty and vigour. Phyſicians have marked the prevalent conſumptive ſtage from 18 to 35, and 40 years of age.

Exclusive of hereditary conſtitution, (the worſt of all ſpecies) of neglected colds, or ſtubborn coughs, of ſcrophulous lungs, of narrow cheſt, of ſanguine plethora and ſpitting of blood, of bruiſes on the trunk of the body, of topical inflammations within the breaſt, neglected or ill cured, all which in their turn moſt generally give birth to the pulmonary phthiſis, various complaints of the fair ſex, originating from obſtruction, or from a contrary fault, terminate not unfrequently in this diſeaſe. Has not the increaſe of law and mercantile tranſactions, and conſequently of young writing clerks, added to the conſumptive liſt? Strong whale-bone ſtays, and tight lacing, are alſo juſtly repro-

bated by the writers on phthiſis, as augmenting the diſmal catalogue.

Consumptions and coughs are terms too lax and undefined. Into the conſumptive gulph, without doubt, are thrown every febrile and ſlow hectic waſting of the body, from infancy to old age, whether from cauſes not well known, from a general atrophy, from the dregs of the natural Small-pox and Meaſles, from the hooping-cough, and from various other febrile and chronic diſtempers. Sydenham obſerved, that conſumptive ſymptoms, as they are called, do not always ſhew a diſeaſe ſeated in the lungs: they may indicate a debilitated drooping habit; and in ſuch ſymptoms, following after tedious fevers, he often found wine, and generous diet, the beſt remedies. Several other cauſes of hectics might be added, ſuch as profuſe evacuations, ſcrophulous meſentery, and internal ulcerations: a juvenile vice ſometimes brings on tabes dorſalis: the hectic fever of infants is deſcribed by many authors: in them too waſting of fleſh, may be the conſequence of diſeaſes in their ſtomach and bowels, and ſometimes of curdled clots of milk, preventing due recruit and nouriſhment.

SEEING that ſuch multitudes die of conſumptions in London, and knowing that pure air is at leaſt equal to diet or medicines in this direful diſtemper, would not 2 or 3 hoſpitals, built for conſumptive patients, at a few miles diſtance from London, ſave hundreds of lives annually? Each great town hoſpital, and above all, thoſe buried in the centre of the metropolis, ſhould contribute their ſhare. There are great numbers in ſuch indigent circumſtances in London, that to ſave their lives, they could not afford the expence of country lodgings. Perhaps a fund appropriated to ſupport the conſumptive in the country, would anſwer equally well, or even be preferable. Another hoſpital erected at Briſtol, where the ſick would enjoy pure air and thoſe waters, ſo celebrated in certain ſpecies of conſumption, might render the inſtitution ſtill more uſeful.

HAVING now with ſome care analyzed Fevers and Conſumptions, immediately after them will be the proper place to propoſe two important queſtions for diſcuſſion: Firſt, Is the winter mortality in this country, and in moſt other European nations, greater than that of ſummer? And ſecondly, Is it true what philoſophers of high repute aſſert, Dr. Price

and many others, that almoſt all diſeaſes ſpring from luxury, exceſſive delicacy, and refinement. I ſhall barely glance at the ſolution of theſe difficult and complex queſtions.

Dr. Short, from a variety of country regiſters, found that mortality generally begins its reign in December, that at March it is in its zenith, and at May in its declenſion. Another proof of this in great cities, is recorded in the *Recherches ſur la Population, par M. Meſſance*; the total ſick admitted into the Hotel Dieu in Paris, from 1724 to 1763, (40 years) were in the 4 winter months December, January, February, and March, 314,824; and in the 4 ſummer months June, July, Auguſt and September, 238,522, or as 4 to 3. In London too the undertakers harveſt is in winter. There is one good reaſon indeed, why in every metropolis, the winter mortality ſhould exceed that of ſummer, from the greater concourſe of inhabitants; but excluſive of additional population in winter, the ſame law ſeems to take place in country towns.

To the prevalence of what diſeaſes ſhould we aſcribe the greater torrent of the winter, than of the ſummer mortality: is it in part to inflammatory fevers, or rather more probably to colds, coughs, and conſumptions, and even

in ſome leſſer degree to chronic diſtempers, and ſickneſs of every denomination? Is a cold cloudy atmoſphere, damp weather, and unelaſtic air, equally injurious to young infants? The winter atmoſphere of Britain is often cold, foggy, and loaded with moiſture, and the heat and cold is unſteady: dry ſpringy air, however rigorous, is much leſs hurtful. Many violent fevers generated in ſummer and autumn, may have imperfect criſes, and the ſufferers may linger until winter, when ſeveral are cut off; but in thoſe of ſtronger conſtitutions, the diſeaſe and debility may be protracted to the next ſpring and ſummer, when they begin to recover. For conſumptive complaints winter air, eſpecially if cold and moiſt, is exceedingly unfavourable: Dr. Sydenham, when recommending riding in ſuch rapturous praiſes, as a ſpecific in the phthiſis, ſhould not have omitted this obſervation.

An exception to the greater mortality of winter than of ſummer, may be mentioned amongſt armies during active campaigns: but this is readily accounted for, when we conſider the new manner of life into which ſoldiers in the field are precipitated, the innumerable hardſhips which they undergo,

dergo, and to which men in peaceable ſociety are not inured: ſoldiers are then expoſed to heats and colds, to wet clothes, to open and night air, and to every inclemency of weather; to cold damp quarters, to the effluvia of moraſſes, to crowded hoſpitals, to hunger, to unuſual perturbation of mind; and in ſickneſs, or during the convaleſcent ſtate, are often negligently attended, or furniſhed with proper accommodations and neceſſaries.

As to the ſecond queſtion, with ſubmiſſion to better judgments, I doubt whether luxury, as it is called, is ſo inimical to the lives of mankind as is commonly imagined: (population is here out of the argument) indeed the diſeaſes from luxury are not ſo conſpicuous in the mortality. I am of opinion, that we ſhall find convulſions, the entire febrile claſs of diſeaſes, and even conſumptions, at leaſt equally diffuſed amongſt the lower and laborious ranks: thoſe arrived at maturity are in the ſame predicament of hardy ſoldiers, both in active ſervice and in winter quarters, who are more expoſed to heats and colds, to wet clothes, to poor diet, to cold and damp habitations or quarters, and to various other hardſhips, than the officers, and are *always*

more ſickly. The officers live in warmer drier lodgings, have comfortable bedding and clothes, feed on more generous diet, drink fermented liquors and wine, and through winter and ſummer, in the field and in garriſon, are much leſs liable to fevers, colds, and ſickneſs than the common ſoldiers. Pringle's obſervations all confirm this: he mentions, that flannel waiſtcoats given one winter to the ſoldiers prevented many colds, rheumatiſms, fevers, and conſumptions; and that the peaſants of Holland were always greater ſufferers by the ſummer, autumnal, marſh fever, than thoſe of the more opulent claſs. The poor too from their ſtraitned circumſtances, are more obnoxious to infectious fevers. Perhaps alſo it would not be unreaſonable to infer, that the better medical advice which the affluent and independent can command in ſickneſs, may contribute its ſhare in giving them advantages over the indigent ranks.

Catarrh and influenza are irregular aſſailants, and do not form a diſtinct article in the Bills. No other epidemic ſpreads ſo ſuddenly and univerſally over a kingdom; in 1743, it paſſed over Europe: nor in any other epidemic

epidemic do ſo few die in proportion to the number of infected. Its continuance is generally ſhort, and what inconſiderable depredations it commits, are principally upon declining, conſumptive, and aſthmatic perſons, upon worn-out conſtitutions, and thoſe whoſe lungs are nearly conſumed: in ſuch forlorn complaints, catarrh haſtens the final diſſolution ſooner than it would otherwiſe have happened. Others who in recent catarrhs live without any care, or perhaps in riotous irregularity, may fall into a peripneumony or conſumption. Perſons too, recovering from agues and fevers, upon catching influenza, have often ſuffered relapſes. I here ſpeak of general catarrhal coughs, from ſome epidemical ſtate of the air: for as to common ſlight colds, few in this country, at one time or other in the year, are totally exempted from them.

Asthma and tiſſick form rather a confuſed combination of diſeaſes; formerly it was conſumption and tiſſick, without any mention of aſthma. I do not in the leaſt doubt, that this chronic difficulty of breathing, which we call aſthma, will accumulate to this formidable group. It is principally

pally amongſt adults, and much more ſo amongſt thoſe in the decline of life, that we muſt ſeek for the mortality by aſthma. The three ſpecies into which authors divide this diſeaſe, ſeem only to differ in degree of difficulty in reſpiration, and ſeverity of the paroxyſms. Beſides theſe gradations of morbid reſpiration, they diſtinguiſh it into the humid, the ſpaſmodic, and the flatulent.

What extenſive ruin do fevers, and diſeaſes of the lungs and cheſt yet ſpread, notwithſtanding the improvements of the moderns in the alphabetical part of medicine; that is in anatomy, phyſiology, chemiſtry, botany, &c.

I have already in the preceding comments upon convulſions, ventured a few new conjectures upon that obſcure medley of diſeaſes called Cholic, Gripes, and Twiſting of the guts. The devaſtation under that title appears in the two laſt tables very inconſiderable; but what ſhares ſhould be apportioned to children and to adults, to dyſentery, to the true ileus or inflammation of the bowels, excited by volvulus of the inteſtines, by hardened feces, or other obſtructions in that canal, by lead, copper, or by a tranſlation of irregular gout, I confeſs my inability to ſolve. From Bloody-flux,

Vomit-

Vomiting and Looſeneſs very few comparatively die at preſent in London. Muſt not the Cholera morbus, a diſeaſe principally occuring in July and Auguſt, come under the mortal title of vomiting and flux? Are inflammations of the ſtomach alſo to be ranged in this liſt?

Worms infeſt children until 14 years of age, much more than grown-up perſons: in all the tables the diſeaſe decreaſes. Is it now ſet down amongſt gripes and cholics, or amongſt hectic emaciations? I am perſuaded that the bills are defective in aſſigning the due ſhare of mortality to worms. In the 30 years preceding the preſent century, the mortality by worms amounted nearly to about 1400: poſſibly hectic emaciations and conſumptions may now comprehend ſeveral true worm caſes. Children are very little infeſted with worms before they begin to uſe ſolid and promiſcuous food, that is, about two or three years old: the children of the poor from their indifferent diet, ſeem to be more obnoxious than thoſe of the rich to theſe inteſtinal inſects, which authors properly diſtinguſh into three ſpecies; the round and moſt frequent reſembling the earth-

earth-worm, the broad tape-worm, called the tinea, often of an aſhoniſhing length, and found principally in adults; and laſtly the ſmall worms reſembling needles, called aſcarides, which in great numbers infeſt the lower inteſtines. In the autumnal marſh fevers, worms are merely one ſymptom of a bad fever, but not the cauſe of the diſeaſe.

I AM well ſatisfied, that the bills rate deaths from Hæmorrhage and Bleeding, greatly too low. Moſt of the fatal hæmorrhages, or floodings from the uterus in the advanced ſtate of pregnancy, or ſhortly after delivery, are indubitably carried to childbed, and a few to miſcarriages: even from the lungs alone I ſhould have thought hæmorrhages more fatal: indeed, for the moſt part, ſpitting of blood, before the tragical cataſtrophe, terminates in a conſumption.

DIABETES is omitted in the bills until 1684, and in the ſucceeding 16 years, 27 only appear to have died of that diſtemper. I ſuſpect that formerly, the few caſes of diabetes which occurred, were thrown into hectics or conſumptions, which is commonly the fatal iſſue of this profuſe and emaciating urinary diſcharge.

APOPLEXY

Apoplexy is generally a diſeaſe of mature and old age. From 1671 to 1701, apoplexy and ſuddenly ſtands at 3010, lethargy at 488, and megrims or vertigo, the frequent preludes of apoplexy, now diſcontinued, at 45. Many ſudden and inſtantaneous deaths are alſo thrown in amongſt the truly apoplectic. Apoplexy is uſually ſaid to have increaſed by more immoderate indulgence in ſpirituous liquors; but the London tables of the preſent century do not ſhow any alarming ſurge. Drunkenneſs and beaſtly intoxication, is not probably in this iſland, certainly not in the metropolis, an increaſing vice of the high and middle ranks of life: beſides, apoplexy in many inſtances, is brought on by plethora, either from habitual evacuations ſuppreſſed, or from ſloth, indulgence and luxurious living, by frequent intoxication, by intenſe contemplation and ſtudy, and by local diſorders of the head: corpulency, a ſhort neck, gluttony, inebriety, and paſſions of the mind will act either as prediſpoſing or exciting cauſes of a fit: the ſame event has followed repelled gout, ſcorching inſolation, and expoſure to the confined vapour of charcoal. Lethargy and Palſy are nearly allied to apoplexy: ſevere ſtrokes of

apoplexy,

apoplexy, not ſpeedily fatal, that is within a few hours, or at the utmoſt a few days, too often terminate in the loſs of muſcular motion, and in impairing the functions of the brain. What proportion of thoſe two obſtinate diſeaſes are cured by medicine or by nature? From 1671 to 1701, the mortality by palſy is but 630: in this century it has conſiderably increaſed.. Probably the mechanical arts, where either lead or quickſilver are employed, whoſe fumes are ſo poiſonous to the human nerves, may have ſome ſhare in the riſe of paralytic diſeaſes.

Lunatic deaths, it is painful to obſerve, are more than doubled in the two laſt tables, compared to the two preceding. In the laſt century, diſtracted and lunatic was the joint title in the bills, and from 1671 to 1701, amount to 554: the former word diſtracted is now left out. Such diſmal objects muſt be numerous in London, when ſo many are reported in the regiſters of mortality. We ſhould reflect, that two of the largeſt lunatic hoſpitals in Europe, Bethlem and St. Luke's, ſtand in this metropolis, excluſive of ſeveral private mad-houſes, which of late years are increaſed in the ſuburbs, and in which many perſons of for-

tune and independent circumſtances are confined. Bethlem, built two centuries ago, but ſince enlarged, contains 270 patients; and St. Luke's, erected 30 years, 110 patients. Mad perſons are ſent from various remote parts of the kingdom to receptacles of confinement in London, at a diſtance from their friends. Perhaps thoſe alſo whom nature originally, or diſeaſe afterwards, branded as idiots, are enrolled amongſt the true melancholic and maniac lunatics. The coroner's inqueſt generally returns ſuicides as lunatics, after however reciting the manner of their death: the ſearchers and the bills of mortality have invariably ranged lunatics and ſelf-murder under two diſtinct heads. I have good foundation to alledge, that many lunatic deaths in London, are not included in the bills: from St. Luke's ſeveral are carried to the burying-grounds of diſſenters; and from the private mad-houſes I ſuſpect, that after death, ſeveral are removed to the country, or perhaps to places of interment not within the bills.

It was not until after great difficulty and trouble in the purſuit, that I at length procured an *authentic* annual regiſter of Bethlem hoſpital during the laſt 30 years: I ſhall

not tire the reader with a detail of this fatiguing ſearch.

A CORRECT regiſter of Bethlem hoſpital during 15 years, beginning with 1751 and ending with 1766, the years commencing and terminating at Eaſter.

Admitted	Buried	Cured, Relieved, and Diſcharged
2733	700	2138

A CORRECT regiſter of Bethlem hoſpital during 15 years, beginning with 1767, and ending with 1781.

Admitted	Buried	Cured, Relieved, and Diſcharged
3045	544	2634

To make the *admitted* to tally with the *buried, cured, relieved and diſcharged*, we muſt divide the uſual ſtanding ſtock of Bethlem, (270) into *two* equal parts, and add one to each interval of the admitted.

OF the 270 patients in Bethlem, 100 are incurable, male and female lunatics, (and nearly equal in numbers) confined in the two extreme wings of that majeſtic edifice. In the firſt table we find, that about 1 of 4, and in the ſecond 1 of 5 lunatics die annually:

by this meaſure, if we can aſcertain the numbers in any city, province, or kingdom of the annual lunatic deaths, a tolerable gueſs may be made of the total amount of the *living* lunatics: it is ſimply to multiply the lunatic burials by 5. I conceive, however, that this mean or multiplier would give the living numbers conſiderably too low, becauſe it is formed upon the moſt deſperate caſes, almoſt one half of which are incurables; 1 of 8 or 10 is probably a more juſt mean: there are many lunatics ſo inoffenſive, as not to require confinement.

In the laſt 15 years, the burials at Bethlem are decreaſed. Perhaps it may be conſidered, rather as a misfortune to themſelves, to their friends, and to the community, that ſo many ſurvive to old age, under this humiliating degradation and wreck of reaſon. In a ſhort converſation, which I had with one of the gentlemen concerned in the management of Bethlem, he communicated to me ſeveral reaſons for the diminution of mortality in that hoſpital. All muſt remember, that until within the laſt 12 years, Bethlem was open to every perſon upon paying a trifling and ſtipulated ſum, and was daily crowded with idle or with curious perſons of every

degree;

degree; ſome of whom flocked there as to a puppet-ſhew, and others to indulge the gloomy pleaſure of ſtaring at ſpectacles ſo mortifying to human reaſon and pride: the patients then breathed foul air, were much more confined and debarred of exerciſe, and in this ſcene of riot and confuſion, not only enjoyed little quiet, but alſo committed many irregularities. The governors have now very properly excluded all viſitors, except the friends and relations of the inſane. Another late improvement is, that at all ſeaſons the patients are much more plentifully ſupplied with vegetables, and when any are ſeized with Smallpox, they are inſtantaneouſly, on diſcovery, ſent out to the variolous hoſpital.

What proportion or average of lunatics in Bethlem are effectually *cured*, the eminent phyſician alone, Dr. Monro, who ſuperintends the medical department of that hoſpital can reſolve. The relieved, cured and diſcharged, are jumbled into one liſt; but it is only neceſſary to extract part of the printed annual addreſs of the governors to the public, to be convinced, that numbers of the diſcharged have received no benefit. The governors ſay, "That in order to make room "for ſuch as may probably be reſtored to

" their ſenſes, they are obliged to reject, and " to turn out many indigent objects, who " upon examination, or after ſome time of " trial appear to be incurable, and whoſe " caſes are therefore the more deplorable as " to themſelves, and often dangerous to " others." The incurable wards are by no means adequate to contain, nor the hoſpital funds to ſupport them; and they are again ſent back to their friends, or to the pariſh workhouſes. Of thoſe alſo who are ſaid to be annually cured, it is difficult to ſay in how many this may be only a lucid interval of reaſon: a tranſitory calm of this mental inſurrection.

Lunacy, even when hereditary, ſeldom germinates, or becomes viſible before puberty. The Greek medical writers have accurately diſtinguiſhed various ſpecies of madneſs, and ſeem to have known as much of the cure as we do at preſent: their practice in ſeveral inſtances is well worthy of imitation.

In 30 years, from 1670 to 1700, 35 deaths only are ſet down to Epilepſy and falling ſickneſs; and in the firſt 45 years of the preſent century, they dwindle to 13: of late years, the title and diſeaſe is totally excluded; yet

medical

medical men know, that great numbers in this city and iſland are afflicted with epileptic fits. Is this horrible and obſtinate convulſion no more inimical to the ſprings of life: is it merely a periodical round of frightful paroxyſms and lingering torture; or are any epileptic confounded with lunatic deaths, as both are conſiderably under the lunar influence? Violent repetitions, and long continued epileptic fits, often end in idiotiſm or lunacy. In infants and children, epilepſy, when ſuddenly mortal, is probably caſt into convulſions. The Jews could only aſcribe epilepſy and demoniac madneſs to the malicious rancour of an infernal devil. It is devoutly to be wiſhed, that remedies could be diſcovered more efficacious than the preſent, againſt this diſeaſe.

The Locked Jaw is a ſingular ſpaſm which ſeldom happens in this country; but in the ſultry climates is fatal to many young infants, and above all in the tropical regions, after amputations and wounds, it ſuddenly deſtroys numbers.

Dropsy prowls with obſtinate deſolation throughout all the tables: this too, like conſumptions, is often the final termination of obſtinate agues, and of various other febrile

and chronic diſtempers, of intemperance and broken conſtitutions, beſides many internal derangements which I do not here propoſe to expatiate upon. Tympany is a very rare diſeaſe compared to the former. From 1671 to 1701, the mortality by dropſy and tympany is 23,366, and liver-grown 488. The three principal, and moſt general collections of water, called dropſies are, that in the Breaſt, that in the Abdomen, and that in the external cellular membrane the Anaſarcous: under the abdominal dropſy, I alſo include that ſpecies peculiar to women, the dropſy of the Ovaria. What deadly ſhare, each had ſingly, or the ſeveral "genera" in conjunction, is concealed in profound obſcurity.

Though dropſies ſometimes occur in infancy and youth, yet it is chiefly upon adults, and thoſe in the decline of life, that they exerciſe their ſlow but ſullen deſtruction. In marſhy countries they are more frequent than in dry ſituations. Sydenham alledged, that women, and particularly after the period of parturition is paſt, were more ſubject than men to dropſies.

From 1671 to 1701, the mortality by Jaundice is 2169: if the bills therefore can be depended upon, the diſeaſe increaſes.

Jaundice

Jaundice is a frequent conſequence of diſeaſes in the liver, of obſtinate agues, and remittent fevers, and particularly of ſtones, ſand, or other obſtructions in the biliary ducts.

Deaths from Stone, Calculus, and Strangury, in the laſt 30 years, are diminiſhed: is this to be aſcribed to more ſucceſsful methods of performing the operation of lithotomy, or to a decreaſe of calculous caſes? Or as ſtrangury is included in the ſame title, are diſeaſes and obſtructions of the urethra from the venereal diſeaſe, venereal gleets, or other cauſes more ſkilfully cured; have modern bougies any ſhare of the merit? With reſpect to lithontriptic medicines, notwithſtanding the parliamentary reward of 5000*l.* for a pretended noſtrum, and that ton weights of paper are annually fouled upon the ſubject, yet in fact we ſeem at leaſt by *artificial* elaborations, to have approached as near the diſcovery of diſſolvents, as the chymiſts have to the philoſopher's ſtone. In the preceding century, the bills mark the mortality alternately under theſe fluctuating titles, cut of the Stone and Stone, Stone and Strangury, Stone, cut of the Stone, Gravel and Stone, and generally Strangury in a ſeparate title. From 1670 to

1701,

1701, the total deaths under theſe different heads are 1796: they may alſo be ſuppoſed to comprize not only all mortal caſes of Stone in the bladder, but alſo all fatal Nephritic paroxyſms, and Inflammations of the kidneys, ureters, and bladder.

An intelligent phyſician of Liverpool, Dr. Dobſon, lately collected a liſt of perſons cut for the Stone, in different county hoſpitals through England: out of 192,394 ſick of various diſeaſes, medical and ſurgical, 430 underwent the operation of lithotomy. Upon this general ſurvey, it was not found that the counties where cyder is drank in great abundance, had more calculous complaints than other counties, where they ſeldom taſte of this liquor. We may likewiſe conclude, that moſt of thoſe who enter into hoſpitals, are of the indigent orders, who, perhaps, never drank a ſingle quart of wine. Sedentary topers undoubtedly are more ſeverely puniſhed with calculous diſeaſes of the kidney and bladder. In Holland, the phyſicians impute the excruciating afflictions principally to the groſs air and diet, and to bad waters. Infancy and childhood, are ſeldom tormented with Stone in the urinary organs.

The

The Gout rather gains ſtrength, and for this ſmall addition we may find ſufficient cauſe in the growth of indolence and luxurious living, in the increaſe of hereditary infirmities, and in ſome degree of literati, of ſtudious ſedentary profeſſions, or of men immerged in other mental lucubrations, who neglect due exerciſe. It is almoſt ſuperfluous to remark, that the regular paroxyſms of this diſeaſe, in its infancy, are very ſeldom attended with danger, unleſs unſkilfully treated: many die at an old age who were ſubject to this diſeaſe, and conſequently are reported amongſt the aged. The irregular aſſaults, chiefly of chronic gout ſtorming ſome of the internal and important organs, can be ſuppoſed to make up the funeral catalogue in London. The gout even when hereditary, ſeldom or never attacks before 20 years of age; but the middle age, and decline of life, are principally harraſſed with this tormenting companion, which commonly accompanies them to the grave. Females from their peculiar conſtitution, and temperance in living, and all the active, induſtrious, and lower ranks, are very rarely crippled with gout. In the laſt century, gout was confounded with ſciatica.

STOPPAGE of the ſtomach, ſo far as I know, indicates no ſpecific diſeaſe, but is a ſymptom of many: it is a vulgar name ſometimes for indigeſtion and rejection of food; and there are few diſeaſes, in which the ſtomach does not more or leſs ſympathize. I enquired from two of the ſearchers what they meant by this phraſe, but they honeſtly confeſſed that they knew nothing of the matter. It is not what medical men call "dyſphagia" or difficulty in ſwallowing, a rare diſeaſe ariſing from different obſtructions in the Eſophagus, and ſometimes from ſpaſmodic, or from paralytic affections of that tube. In the laſt 30 years of the preceding century, ſtoppage of the ſtomach is rated at the amazing number of 12,046, and riſing of the lights in the ſame interval at 3840. The mortality in the laſt table of the preſent century, compared to the former, is not 1-70th part ſo great. It would baffle the ingenuity of an antiquarian, to decypher the true import of theſe two terms; ſevere ſickneſs, or the word abracadabra, would be full as intelligible. What proportion of infants, of adults, and of the two ſexes, are crowded into theſe two immethodical articles? Are any caſes of hyſterics comprehended

prehended under either of them; or is this teazing convulſion, peculiar to the fair and delicate ſex, and ſo alarming in appearance, rarely attended with any immediate danger to life? By long continuance, hyſterics will no doubt injure the conſtitution, and occaſion chronic diſtempers.

I collected from the Diſpenſary books of Alderſgate-ſtreet, before-mentioned, in a preceding page of this chapter, an exact liſt of the numbers who had applied for advice in the following female diſeaſes, which are overlooked in the London bills of mortality. The total ſick, or diſeaſed during ſix years, were 29,511; and by far the greateſt proportion of theſe, were adults, and more females than males. Of the above liſt were afflicted with Profluvium Menſium, 270; with Fluor Albus, 446; with Menſium Obſtructio, and Chloroſis, 254; and with Hyſteria, 1104. Under hyſteria, however, I perceived, and was afterwards informed, that the phyſicians arranged all female Nervous complaints, without particularly attending to a pathognomonic ſymptom of hyſterical paroxyſms, the globus or round ball, riſing up to the throat: hyſteria ſerved as a ſhort, convenient, technical

cal diſtinction, in their hurry of conſultation and preſcribing for ſo many patients: under fluor albus alſo, a few caſes of gonorrhœa were concealed. From the above curious facts it is reaſonable to infer, that relaxtion predominates as a female complaint *in London*. Amongſt the higher, indolent, and luxurious ranks, and particularly in cities, all theſe diſeaſes are more frequent. The hyſterical diſeaſe rarely, if ever, manifeſts itſelf before puberty and the period of menſtruation, which with us is commonly about 14, 15, or 16: from that period to the decline of life, we may find many women ſingle and married, ſubject to this infirmity. The true Hypochondriacal diſeaſe of males, and nearly analogous to the hyſteria of women, is by no means ſo general and frequent.

From 24 years of the London bills, and from ſeveral country regiſters in England and Germany, Dr. Short calculates, that upon an average, 1 of 60 women die in Child-bed; others, upon better foundation, make the proportion 2 of 300. Every perſon may ſatisfy himſelf reſpecting the validity of this eſtimation, by comparing the deaths in Child-bed, and by miſcarriages throughout

throughout the five London tables, with the births and abortives in the ſame interval; making allowances at the ſame time, for greater omiſſions of births and miſcarriges in the public regiſters. Another circumſtance to be taken into conſideration is, that amongſt ſuch a multitude of women, a ſmall part muſt be ſuppoſed to have died annually, independent of the pregnant ſtate, and its dangers.

What were the ſeveral diſeaſes before and after delivery, which occaſioned this mortality amongſt the female ſex, and how many died from mere difficulty in labour, we cannot learn from the bills. From difficult and laborious births, where inſtruments are directed, or at all required, I venture to aſſert, a very diminutive part of this lot periſhed: this is conſonant to all the beſt modern accoucheur treatiſes, in which inſtruments and rude violence are more and more reprobated. Profuſe Floodings may precede, accompany, or immediately follow the efforts of labour and parturition: Milk fevers, and ſometimes Inflammations of the womb, Suppreſſion or depoſition of the milk on ſome vital part, ſudden and premature ſuppreſſion of the Lochial flux, or other dangerous diſeaſes,

eaſes, ſuch as Miliary fever, with red or white eruptions on the ſkin; and in rare inſtances, a Malignant infectious fever may ſucceed delivery. It is under the title Childbed we are to collect the mortal event of theſe different diſeaſes. Between the third and fifth day, is reckoned a critical period after delivery; and ſhould the woman eſcape until the ninth day without any of the foregoing accidents ſupervening, danger is then commonly over. Particular years appear to be more fatal to breeding women than others. Is the firſt labour commonly the moſt hazardous?

Early miſcarriages, from the ſecond to the fourth or fifth month, though not recorded in the public regiſters, are much more numerous than in the latter months of pregnancy, but happily they are infinitely leſs hazardous to women. Excluſive of frights, violence, or ſeveral other faults on the part of the mother, fœtuſſes in their delicate rudiments in the womb, are ſometimes like vegetable bloſoms, eaſily blighted; but the mature Abortions and Still-born, are alone thought deſerving of burial, or noticed in the bills. To carry a diminutive embryo of two, three, or even four months old to the church-yard, when it

it will not equal a Lilliputian in ſize, and to bury it with funeral pomp and obſequies would be too ridiculous. Without doubt, a very conſiderable part of the ſtill-born, probably the majority, had arrived at their full time and growth, and were ſtrangled during tedious labours, through the ignorance or raſh practice of midwives.

BRAZILIAN women are ſaid in Smollet's collection of Voyages to be very fruitful, and to have ſo eaſy labours, that immediately after delivery, the woman riſes up, walks to a neighbouring river, and there purifies herſelf; the huſband in the mean time goes to bed in her place, and is nurſed with as great tenderneſs, during the firſt 24 hours, as our European women when lying in. By Mr. Brydone's deſcription of the Sicilian women, they ſuffer very little in delivery, and next day admit female and male viſitors to their bed-chambers. In this country, and moſt parts of the continent, we religiouſly enjoin reſt and quiet during the firſt eight or nine days after delivery: and I conceive in ſo doing, we act wiſely and prudently.

I SHOULD rejoice to ſee a few ſchools eſtabliſhed in this capital, and in ſome other

large towns, for the inſtruction of female midwives, where in one year's time they might be taught all the neceſſary rudiments of the profeſſion. In almoſt every clumſy mechanical art, it is thought indiſpenſibly requiſite to be initiated by a regular apprenticeſhip; and it is the extreme of abſurdity to ſuppoſe, that the obſtetric art can be learned by inſpiration. Nature undoubtedly is, in moſt inſtances, the principal operator and phyſician in labour; if this was not the caſe, the human race muſt have been annihilated in a few centuries; but Nature may want aſſiſtance, or by ignorance, is much oftener unneceſſarily interrupted, diſturbed, and exhauſted. Child-bed fevers are frequently kindled by officiouſly harraſſing, or over-heating women with cordials, by neglect of cleanlineſs, and by ſtewing them in cloſe rooms, where, as was formerly done in the Small-pox, they are ſweated and ſuffocated in foul effluvia. To the ignorance of midwives, muſt be imputed the loſs of many tender lives of the Abortives and Still-born during labour, and arrived at full maturity, or at leaſt at eight months old: their number, as is obvious at the bottom of each

table, is very conſiderable. In ſeveral caſes, either a wrong poſition of the child, a preternatural enlargement of its head, its large ſize, or its being dead; a ricketty pelvis of the mother, her weakneſs, a flooding coming on, ſome faults in the uterus, and in a word, a variety of other impediments and threatening dangers may render manual and judicious aid indiſpenſible. In the various critical emergencies following upon the heels of parturition, untutored midwives are equally embarraſſed; danger is often not ſuſpected, nor detected in time.

By means of ſuch a general inſtitution, where women ſhould be regularly and wiſely inſtructed in all the material knowledge of midwifry, I firmly believe, that many thouſand lives might be annually ſaved to theſe two iſlands. This eſtabliſhment would anſwer other valuable purpoſes: it would prevent a ſuperabundance of that mixed gender of male midwives, together with unbecoming indelicacies, and connubial treſpaſſes, which ſome writers, I know not how juſtly, have alledged to be the conſequence of married women wantonly and unneceſſarily employing men in theſe familiar offices.

The Evil or Scrophula, apparently decreaſes throughout the tables: From 1671 to 1701, deaths by the Evil amounted to 2261. Has the more general uſe of vegetables in diet, any effect in repreſſing this glandular and hereditary depravity? It often terminates fatally in conſumptions.

Leprosy is now almoſt eradicated and worn out of the metropolis. In the 30 years preceding the preſent century, the mortality by this loathſome diſeaſe amounts only to 33. During and after the Cruſades of the twelfth century, Europe was deluged with this filthy judaical ſcurf imported from Paleſtine: lazarettos for the confinement of the unclean abounded in ſeveral kingdoms, in France alone ſtood 2000. At preſent, in the cold northern iſland, Iceland, a ſort of lepra arabum, is congenial to the natives from their diet, climate, and manner of life.

It is not quite 300 years ſince the firſt diſcovery of America, and the importation of the Venereal Diſeaſe into the old world. Before the diſcovery of the Indian remedy, the decoction of guaiacum, and a few years ſtill later, of mercurial unction, Europe was alarmed with univerſal conſternation at

the

the hoſtile inroads of this diſeaſe: multitudes periſhed under the corroding ulcers, preſenting before death horrid ſpectacles of cadaverous corruption and deformity.

In the 30 years immediately preceding the preſent century 2360, died in London by the French pox. The diſeaſe is even at preſent more baneful, at leaſt to London, than medical men, acquainted with the infallible remedy and mode of cure, would ſuſpect. For this, two probable reaſons may be alledged: the ſwarms of ignorant vermin called Quacks, who burrow themſelves in all large cities, and the increaſing multitude of common proſtitutes, who diſſeminate the infection, many of whom from irregular living, negligence, poverty, expoſure to cold and hardſhips, or application to thoſe inſidious aſſaſſins, diſguiſed under the maſk of M. D.'s, and ſurgeons, periſh miſerable victims to this diſeaſe. Credulity has made murder a profitable traffic, and his Majeſty's letters patent, proſtituted by his miniſters and ſervants to common ſale, give an additional encouragement to the venders of every traſh and poiſon; they lay their ſnares in every thoroughfare, and kill the unwary

with as much indifference, as undertakers afterwards carry them to the church-yard. There is not perhaps any other diſeaſe where profeſſed quackery is ſo often reſorted to, and where its decoys are ſo fatal to the inhabitants of this metropolis.

Would it not be poſſible to cut up this American poiſon by the roots through the kingdom? Some poſſibly may conſider it in the light of a penal ſtatute againſt vice and debauchery, but I am not ſatisfied that morality could be in the leaſt endangered by its radical extermination; and to require whole hecatombs of human ſacrifices annually, is too bloody and ſevere an expiation for that tranſgreſſion. Should it not be found practicable or adviſeable to eradicate the diſeaſe, would not two diſtinct hoſpitals, ſufficiently large to contain male and female venereal poor, reſcue numbers from the artifices of impoſtors, and from ruinous deſtruction? Separate apartments might be laid out for others not altogether in indigent circumſtances, and who, upon entrance, ſhould pay down a ſmall ſum for their maintenance and cure. Many of the young laborious claſs (I ſpeak of the female ſex) not yet hackneyed

neyed in profligacy, are plunged into irretrievable diſtreſs, in conſequence of catching this diſtemper. Many conſtitutions of our diſſolute young men, might probably by this means be protected and preſerved from venereal depredation. Some regulations are wanted, and I humbly recommend the ſuggeſtion of an adequate and practicable remedy to the reader's conſideration. Are any pox caſes concealed under conſumption, or under ſores and ulcers, either by deceiving the ſearchers, or by means of a ſmall bribe?

True Scurvy is ſeldom or ever mentioned by any writer, before the long voyages firſt began three centuries ago by the moderns; that is, on the diſcovery of the paſſage to Aſia by the Cape of Good Hope, and the diſcovery of America: then, in conſequence of living long on ſalted and groſs diet, and the want of freſh vegetables or fruits, together with their ignorance of the true cauſe and cure, this diſeaſe made ſevere havock amongſt naval ſquadrons. The ancient navigators, who ſeldom ventured out of ſight of land or capes, and who probably were not under the neceſſity of ſubſiſting long on ſalted food, do not appear to have ſuffered by, nor even

to have known the diſeaſe. Hippocrates is by many ſuppoſed ſlightly to allude to ſcurvy under the name of large ſpleen, accompanied with putrid ſpongy gums, and offenſive breath: it is alſo, though indiſtinctly, noted by Pliny, as affecting a Roman army, encamped on the banks of the Rhine.

THROUGH all the northern kingdoms of Europe, particularly in the winter ſeaſon, and in Holland, amongſt thoſe who fed chiefly on ſalted fiſh and groſs diet, who drank bad waters, and dwelt either in moraſſes, or near the ſea-coaſts, and were expoſed to cold and moiſture, ſcurvy, in the two laſt centuries, made cruel ravages. Several armies and beſieged garriſons in Germany, intercluded from freſh vegetables, were devoured by ſcurvy: numbers of the new ſettlers in the northern colonies of America, and at Newfoundland, were cut off by this diſeaſe. The North Americans at length were taught by the Baltickers and Swedes, the ſovereign benefit of drinking ſpruce beer, which is an excellent ſubſtitute, when freſh vegetables cannot be procured: the induſtrious Dutch made drains and canals to carry off water, and truſted the reſt of the cure

or prevention to ſour crout: in ſome of the northern kingdoms of the continent, acidulated bread, and a ſour drink uſed by the Ruſſians, powerfully reſiſt ſcurvy. By theſe and other precautions, this foe is now much leſs formidable on land; but at ſea, no other is ſo inimicable to navigators: on that element, it is yet the ſea monſter and tyrant. The effectual antidotes, and certain cure, are now ſo well known, for no diſeaſe yields more ſucceſsfully to remedy, that I dare to maintain multitudes of the lives loſt by the Scurvy at ſea, are ſacrificed to groſs negligence, or to impolitic and inhuman œconomy.

From 1671 to 1686, the deaths by Scurvy are in the London bills, 9451, and in the ſucceeding 15 years, 569 only. It is common I know for perſons ignorant of medicine, or for ſmatterers in this ſcience, often to call various cutaneous foulneſs of the ſkin, by the name of ſcurvy. Whether all thoſe therefore died of the genuine ſcurvy, I cannot decide. Another ſuſpicion of ſome weight with me, is this: the theory of the laſt century imputed many diſeaſes to this ſpecific "cacoethes" as they called it; perhaps this fuliginous theory and prevalent opinion may

in

in ſome degree have influenced the ſearchers report. The ſcurvy, the liver, and the nerves, have been convenient hiding-places for frothy and pompous ignorance. Quackery too at this day, is indefatigable in its infernal artifices, in puffing off noſtrums for a diſeaſe, which avarice and ſelf-intereſt prompt them falſely to repreſent as the latent and grand diſturber of health. In the preſent century, ſcurvy has deſtroyed very few in London; and even of this ſmall number ſet down in the bills, the diſeaſe in ſeveral, may have been bred at ſea: in London, the lodgings are now warm and dry, and the people in general well cloathed; animal meat is eat freſh; vegetables, though perhaps not univerſally conſumed in ſufficient quantity, are certainly in great abundance; beer, fermented liquors and tea, are drank by all ranks: theſe, in conjunction with exerciſe, powerfully reſiſt the tendency to ſcorbutic corruption.

What proportions of Inflammations, Impoſthumes, and Mortifications, were external or internal, and what organs or parts of the body they affected, is left in the dark by the bills. Inflammation magnifies in an unuſual and unaccountable rate throughout the five tables, and impoſthume or abſceſs conſtantly

ſtantly decreaſes; mortification alſo is a very conſpicuous and formidable enemy. I conſign over this whole group to the medical or ſurgical reader, to extricate from the labyrinth of ambiguity, in which it is at preſent enveloped.

SHALL we never be ſo fortunate as to diſcover any remedy for that deplorable and excruciating diſeaſe, the Cancer, which ſets medicine, and too often that dreadful alternative of ſurgery, the knife, at defiance? Shall we never be able to blunt this cauſtic poiſon in the body, as certainly and ſucceſsfully as we do the ſcurvy, or the venereal diſeaſe? All our preſent medicines cried up for the cure of cancers, appear to me of as little real efficacy, as thoſe uſually preſcribed for diſſolvents of the ſtone: they are jaded routines, hackneyed repetaturs, and nauſeous traſh, upon which we may ring the changes to eternity, with very little benefit to mankind. The female ſex are moſt annoyed by this venomous ſcorpion, particularly in their breaſts, and not unfrequently in the uterus.

SORES and Ulcers have decreaſed; were any of them venereal, or ſcorbutic? Are we indebted to mercury, to ſurgery, or to what other cauſes for their diminution? Burſten

and

and Ruptures decreaſe throughout all the tables. From 1671 to 1701, they had ſwelled to 917. Are we indebted to modern ſteel truſſes for having leſſened the number of victims to this diſeaſe? Perhaps too, though in a diminutive degree, to more ſkilful methods in relieving deſperate inteſtinal protruſions. Were infants equal ſufferers with adults?

Self-Murder, a peculiar gloomy paſſion and propenſity of the Engliſh, as they alledge on the continent, has increaſed in the preſent century, and ſurpaſſes the number of thoſe ſacrificed at that infamous human ſlaughter-houſe, Tyburn. The ancient Romans were notorious for the ſame crime: to explore the probable cauſes, we ſhould launch into an intricate digreſſion upon national character, paſſions, and manners. From 1671 to 1701, the bills have rated thoſe who hanged, and made away with themſelves, at 556: they are now doubled. In a treatiſe publiſhed not many years ago, by Sir S. Theodore Janſſen, he calculated the wholeſale carnage of human fleſh at Tyburn, at 678, in the ſpace of 23 years. It is rare for either of thoſe violent and ſhocking diſſolutions, to happen before puberty.

The

The murdered from 1671 to 1701, were 432; it is with pleaſure that in the two laſt tables of the preſent century, we behold this dreadful crime on the decreaſe. Are we indebted for this, in ſome degree to the ſtreets and ſuburbs being better lighted, watched, widened, and paved; or are the lower claſs alſo now leſs barbarous: in theſe days our robberies are ſeldom accompanied with cruelty. That modern and magnificent eſtabliſhment, the Foundling Hoſpital, for the reception of young, and eſpecially illegitimate infants, has perhaps reſcued many of theſe new-born ſtrangers from violent deaths. This noble inſtitution, had its firſt beginning in 1741.

The numbers drowned in London from 1671 to 1701, were 2182; and when we behold the multitude of ſailors, watermen and paſſengers, on the river Thames, many diſaſters of this ſort, muſt naturally be expected. Drowned perſons formerly, in order to revive life, were often ſuſpended by the legs, or laid in a prone poſture, with the face and head downwards, and rolled over a caſk or cylinder, from an erroneous idea, that the ſtomach and lungs were filled with water.

Theſe

Theſe rude methods tended to load the head with blood, and anſwered no good purpoſe.

On ſuch ſudden accidents, the moſt important and effectual directions, firſt publiſhed and inculcated by the Dutch, and lately in imitation of them by the Humane Society in London, are, inſtantaneouſly to ſtrip off all the drowned perſons clothes, to wipe him dry, and to lay him in a heated bed between ſeveral layers of warm blankets, uſing afterwards inceſſant friction with heated flannels alternately on the breaſt, back, belly, and over all the extremities: Volatile Salts, Spirit of Sal Ammoniac, or in defect of them, any other ſtrong ſtimulants, ſhould be frequently applied to the noſe and temples, and bottles of warm water or heated bricks, repeatedly renewed, and laid to the ſoles of the feet: another aſſiſtant is to apply his mouth to the noſtril of the patient, or through a wooden pipe forcibly to blow in air to inflate the lungs, irritating the *ſhort* alternate motions of reſpiration, and forcing the air out again. Heated fumes of tobacco, if convenient, may be blown up the anus; and blood, if practicable, drawn from the arm or jugulars, but not too laviſhly. The attendants are to perſevere without intermiſſion, in the

labour

labour of friction and applying heat, and of blowing in and preſſing out the air; and are not to deſpair of reviving the circulation and the vital powers, though to all appearance extinct, until after at, at leaſt, two or three hours ineffectual exertions. Many who had lain under water a quarter, a half, and a few three quarters, and as they report even a full hour, were afterwards, by ſuch means, happily reſpited from the grave. The ſame methods uſed, but with more gentleneſs, when infants after a tedious labour are brought forth apparently dead, or in other caſes, of ſudden privation of ſenſe and motion, might probably recover ſeveral again to life.

Frequent conflagrations of houſes in London will account for thoſe burnt. More now ſeem to periſh by that dreadful death than formerly.

By Poiſon, and the Bites of mad animals, very few are, apparently at leaſt, deprived of life. From 1670 to 1701, 68 deaths are ſet down to poiſon: were they accidental or premeditated?

The Overlaid are greatly decreaſed: is this owing to more care of ſuckling nurſes and mothers, or to erroneous reports formerly of the ſearchers, reſpecting the cauſe

of

of infant deaths, or to what other cauſe? I confeſs my ignorance.

From frequent Surfeits and repletions, and that filthy diſeaſe gluttony, many lives are ſhortened. Surfeits in the laſt century make a monſtrous article in the chronicle of London deaths: from 1670 to 1690, they amount *annually* to 3 and ſometimes to 400: in the laſt table of 15 years, they ſink down to 27: yet good eating and gormandizing are not worn out of faſhion in this city. Medical men know, that ſurfeits and intemperance are often merely prediſpoſing or occaſional cauſes of diſeaſes; they may on ſome occaſions rouſe up latent diſorders, or diſpoſe the body to receive noxious impreſſions from without: the ſearchers therefore, as I ſuſpect, have formerly made many of their reports from the oſtenſible cauſe which they ſuppoſed gave birth to the diſeaſe and to the mortality. At the ſame time, I am not contending for the delicacy and moderation of our fore-fathers appetites; they were unqueſtionably in the laſt century, and partly indeed from the cheapneſs of fleſh meat, and the ſcarcity of vegetables, more carnivorous in their diet, than the preſent London generation.

Excessive drinking is not mentioned in the bills before the year 1700: was it until then included under ſurfeits, or totally omitted? In the firſt 27 years, the deaths from this cauſe were 190: but from 1731 to 1747, in 15 years they ſwell to 678; in the following 15 years, they ſink to 189; and in the laſt table to 69 only.

In the above inſtance, may we not doubt whether ſo great a change took place in national manners and potations, as to occaſion this ſudden flux and reflux in the mortality by exceſſive drinking. A continued round of intoxication, in its ruinous conſequences, I am convinced, ſends many more to their graves than are ſpecified in the laſt tables: theſe, I preſume, are inſtances merely of precipitate deaths from brutal inebriety. Our libations are become more temperate and decent, as we advance in civilization and refinement. With more rational variety in our employments and entertainments, has not tea alſo contributed its ſhare to the ſobriety of the nation, and partly to expel theſe Gothic cuſtoms? Coffee, in ſome other European nations, may lay claim to the ſame merit. The ſouthern nations of

Europe, (the Swiſs excepted) the French, Italians, Portugueſe, Spaniards, and Turks, are all noted for ſobriety; but in ſeveral northern kingdoms of the continent, and perhaps in a contiguous iſland, Ireland, many thouſands are deſtroyed by this beaſtly intemperance. Diſtilled ſpirits undiluted, and drank to exceſs, are much more ſudden and miſchievous in their effects than malt liquors. Numbers of the North American Indians have been cut off by their unbounded rage for ſtrong ſpirits: a ſavage there would never voluntarily ſtir from the dram bottle. Our barbarous anceſtors the Germans, as deſcribed by the elegant pen of Tacitus, filled up the languid interval of war, in the ſavage luxury of diſorderly drinking, feaſting, and gaming; and after wallowing days and nights in all the extremes of gluttony and coarſe inebriation, their noiſy feaſts generally terminated in battles and bloodſhed. There are few good things which ſome men do not abuſe: notwithſtanding the impotent interdictions and puritanical cant of four bigots or affected writers, mankind, I believe, may without any injury indulge, in the moderate uſe of thoſe exhilirating and

ſocial friends, whether extracted from the grape, from the apple, or from malt, provided they are unadulterated.

It appears rather extraordinary, that when libraries bend under the weight of our laws, and that even our criminal and penal ſtatutes are ſo voluminous and ſevere upon the moſt petty thefts, that the adulterators of wines, fermented liquors, tea, and bread, ſhould not have been conſidered as the moſt atrocious villains, who wilfully and deliberately perpetrate, at the ſame time, both fraud and murder.

Those ſet down as found Dead, are in the laſt 30 years, much leſs numerous than in the preceding 30: whether this in ſome degree is to be aſcribed to better regulations reſpecting the poor, or to what other cauſes, I leave to the reader to diſcuſs and ſettle. Several, no doubt, of this unhappy liſt, periſhed through nakedneſs, cold and hunger: but is it credible that the majority were ſuffered to expire by this miſerable death. In the laſt century, the bills expreſly mark found dead *in the ſtreets*, and from 1670 to 1701; they amount to only 283, and the ſtarved to 19.

Head-ach and Grief, are two diſeaſes which I have hitherto paſſed over without

any remark. The cure or eaſe of the former frequent and tormenting pain, appears to me too little attended to by medical men. The lives of numbers are rendered wretched and burthenſome from this affliction; and ſome of the ancient medical authors, are very prolix in recommending different modes of relief and cure. I do not here ſpeak of head-ach as a tranſient ſymptom of fever, or of other diſeaſes; but as a chronic, primary, or at leaſt the principal diſtemper.

Grief, and the various melancholy or corroding paſſions of mind, eſpecially if too ſtrong and long continued, and unremittingly rivetted upon a ſingle object, though ſlow in operation, are immenſely more fatal than the bills point out; but to treat this ſubject with accuracy, would require a ſeparate diſſertation. To mental ſources, originally may be traced many caſes of madneſs and ſelf-murder, many ſtomach, hypochondriacal and nervous diſorders: we ſhould find them in many inſtances weakening and waſting the nervous and muſcular vigour, diſturbing the hours conſecrated to reſt, impairing the appetite and digeſtion, by degrees deranging the

other

other wheels of the human machinery, and at length breaking down the conſtitution.

In large civilized and poliſhed ſocieties, the various groups and orders of mankind, that is, thoſe advanced beyond the age of childhood, are kept more or leſs employed by three principal ſpurs, dire neceſſity, avarice and ambition, or from a mixture of theſe incentives to corporeal and mental exertions: a luſt for pleaſure of one kind or other, ſeems to be a paſſion common to every degree; but in all, there are innumerable ſhades and gradations. The paſſions are more acute, and exert their fickly tyranny more ſeverely over the middle, and eſpecially the higher ranks of life: from their independent or affluent circumſtances, they are ſometimes cloyed with ſatiety and tumultuous enjoyment, or preyed upon by liſtleſs and irkſome inactivity; in other caſes the reſtleſs fervency of the mind, inceſſantly bent upon one ambitious or avaricious purſuit, is often not withdrawn, nor its tide and force diverted and broke, by buſtling and providing for immediate neceſſities or moderate luxuries, nor by any other official and active employment. Intenſe application of mind, and deep medi-

tation over books, without any agreeable viciſſitude or relaxation, from whatever motives, are equally noxious to the ſtomach and nerves, and often give riſe to the hypochondriacal complaint. In all the above-mentioned caſes relating to the paſſions, and to ardent contemplation or ſtudy, it muſt be remembered, that a ſedentary life will much ſooner give them root and energy; and that in different conſtitutions, the ſame cauſes will produce different effects: the paſſions for the moſt part exerciſe their noxious and malignant ſway after the years of puberty, and much more ſo after the meridian of life. A licentious and diſſolute exceſs in venereal dalliance, is an early and a late vice, too frequently rebellious to all the exhortations of moraliſts, and by which numberleſs conſtitutions are injured, and many ruined.

Amongst the wealthy and elevated claſſes, many diſeaſes are engendered from their own vices, intemperance, or indolence: to explore them thoroughly, would lead into a prolix diſquiſition: excluſive of the gnawing paſſions, they are entangled with other conſiderations. Thus indolence, late hours, riotous diſſipation, luxurious living, want of ſufficient

ficient exercise, and studied effeminacy of pampered mortals, will account for many cases of gout, of hypochondriasm, and hysterics, of vapours and female relaxations, and valetudinarian infirmities.

Aged in the bills Dr. Short demonstrates, must signify those advanced to 69 or 70 years of age, and upwards. With respect to the dilapidation by time, much will depend upon constitution and manner of life; some are worn out at 60, whilst others at 70 are healthy and vigorous. The variation in the number of aged through the different tables, probably depends in a great measure on the capricious returns of the parish searchers.

We are not to estimate the relative number, frequency, or proportion of certain diseases compared to others by the absolute mortality of each. For instance, Apoplexy has killed rather more annually in London than Measles; but the latter disease is infinitely more general and diffused amongst the community, and consequently less dangerous to life. Cancerous and Venereal cases are widely different in the annual number which are afflicted with each, although the deaths are not far distant from an equality. Epi-

lepſy is a more frequent diſeaſe than Apoplexy, although very few deaths are ſet down to the former convulſion: the ſame may be ſaid of Rheumatiſm compared to the Dropſy, and of Cholic compared to Aſthma. Theſe obſervations will apply to a great many other diſeaſes; but I am fearful of ſatiating the reader by ſuperlative minuteneſs, and unneceſſary prolixity.

I AM now drawing to a concluſion, and am about to advance a curious and comprehenſive propoſition. Six hundred thouſand inhabitants within the bills of mortality, Dr. Price conſiders as too large an allotment; but to make the London inhabitants more numerous than what he allows, is erring on the ſafe ſide, and enables us to form a convenient numerical radix. If the inhabitants of Great-Britain and Ireland, including London, amount to 9,000,000, and if diſeaſes, deaths, and caſualties were equally diffuſed and fatal to the whole community, then in this caſe the London bills would ſerve as a ſcale or index of mortality to both nations: as many would die *annually* of every diſeaſe and caſualty throughout *nine* millions, as are cut off in *fifteen* years in London; becauſe

6 multiplied by 15, gives 9,000,000: but we are ſenſible, that in London infant deaths under 5 years of age, far exceed thoſe of the country, and the city has proportionally fewer breeders: again, in the fenny countries, Agues abound more than in the metropolis, and in the naval hoſpitals during war, the ſcurvy: with theſe and ſome other exceptions, which will occur to medical men, and to gentlemen of reflection, were the mortal diſeaſes correctly diſcriminated, ſome diſtant gueſs and probable conjecture might be formed of the annual proportion deſtroyed by ſimilar afflictions throughout Great-Britain and Ireland. The ſame general rule may be applied to meaſure the national proportion of abortives and aged.

At preſent, medical men muſt deplore the defects and inaccuracy of the London bills: the data from them, in numerous inſtances, are ſo dubious and perplexed, that it is impoſſible to form beyond probable calculations and propoſitions. Such as they are, I have in my arrangement, interpretation, and reflections, exerted conſiderable ſtudy and induſtry to render them of more general utility. There are altogether between 80 and 90 diſ-

90 diſeaſes and caſualties diſtinguiſhed in each of the tables; theſe I have diſentangled as well as I was able into their ſeparate genera. In ſo extenſive a range, embracing nearly the whole circle contained in Noſological Syſtems, a few local diſeaſes of the Eyes, Ears, Teeth, Voice, and ſome external deformities excepted, I met with repeated difficulties in adhering to my original and ſettled plan, which was to ſelect and to condenſe into a narrow compaſs, a multitude of uſeful facts. I truſt it will not be thought preſumptuous in me to alledge, that a more perſpicuous and comprehenſive view of the London diſeaſes is here exhibited, than has hitherto been done by preceding writers. I have made ſome new attempts to meaſure the ravages by death through every period of life, to preſent the king of terrors, with all his frightful band of pain and diſeaſes, arranged in hoſtile front, to compute the number and force of his infernal cohorts, and to point out the inroads by which his principal aſſaults and carnage may be expected. Except what little has been done by Dr. Short, mathematical prognoſtics are alſo a new part of medicine: in ſuch emergencies, the conſtant appeal has been to apho-

riſms

riſms and venerable opinions. Without any deceptious pretenſions to the knowledge of Noſtrums, or of Alchymy; or without being deluded by any romantic reveries and impracticable chimeras, I flatter myſelf with having, in the courſe of this work, demonſtrated in what manner multitudes of lives may be at leaſt reſpited from the grave, until after diſcharging important duties in ſociety, nature by ſlow and imperceptible gradations, ſhall better reconcile their ſubmiſſion to the tyrant's inexorable and final blow. London, and every great City in Europe, who in imitation of the Britiſh Capital, had reſted their principal ſecurity upon an Inoculating Hoſpital, a defence againſt the maſſacre of Natural Small-pox, will, I preſume, reap advantages from my labours on that ſubject: the elucidation and demonſtration of that important propoſition, impartiality muſt allow me to claim as my own.

POST-

POSTSCRIPT.

The Sketch of a Plan propoſed for new-modelling and eſſentially improving the LONDON BILLS *of* BIRTHS *and* MORTALITY, *and equally well adapted to every other great City.*

IF any material inſtruction is in future expected from the London bills of births and mortality, they muſt undergo a total reformation: ſhould they be continued in the ſame imperfect and negligent manner, politicians, philoſophers, phyſicians, and the community at large, will, at the expiration of 100 years hence, glean a very inſignificant addition of edification or benefit by their continuance, beyond what we are at preſent in poſſeſſion of: they are Gothic ruins, which it is waſting time to prop and plaſter. The Model I ſhall offer is extremely ſimple, can be executed with great facility, and ſupported without any additional tax or expence.

After the care already beſtowed upon this ſubject, very little remains to be added, in order to make the reader perfectly comprehend the inaccurate management and police of the London bills: a few obſervations were reſerved for this place. The law ordains, that every perſon, of whatever ſect, who dies in London or the ſuburbs, is to be inſpected by the two pariſh ſearchers, and reported to the pariſh clerk, who then grants his certificate for the interment: this was originally intended to detect the plague and concealed murders, in both which reſpects, for the laſt 100 years, the pariſh clerks and the ſearchers have been almoſt totally uſeleſs. Even in the preceding century, when the plague raged in London, the ſearchers report was rarely truſted without a phyſician or ſurgeon attending to prevent miſtakes. On complaint to the coroner, that a corpſe was buried without previous inſpection by the ſearchers, that officer might now order the grave to be re-opened, the friends of the deceaſed would be put to expence, and perhaps ſuſpicions of an unfair death might be alledged againſt them: or, if the corpſe is carried away to a different pariſh for

interment, the ſearchers report, and the clerk's certificate are equally neceſſary, otherwiſe, that pariſh where the corpſe is buried, is liable to a proſecution and to ſome fine.

NOTWITHSTANDING this ceremony of inſpection by the ſearchers, and of making their reports to the pariſh clerk, it does not hence follow, that the clerk makes the return of the death to the general hall, *unleſs the corpſe is buried in his own ground, or parochial church-yard.* If the corpſe is carried to any diſſenting ground, and to various other places of ſepulture not within the bills, the death and diſeaſe is ſo much waſte paper, and is never heard of amongſt the burials. Again, if the corpſe is carried to a different pariſh, together with a certificate, then if ſuch burying-ground is within the bills, the death and diſeaſe is returned to the hall by the clerk of that pariſh, where the corpſe is interred.

I MADE it my buſineſs to find out and to converſe with a variety of pariſh clerks, in different parts of this metropolis: moſt of them agreed in opinion with me, that beſides radical defects, both in the chriſtenings and burials, there were many other groſs omiſſions,

omiſſions, ariſing from ſcandalous neglect in ſome of their brethren. One inſtance I ſhall mention, and many more, though perhaps not altogether ſo flagrant, I am confident might be collected. The pariſh clerk of St. Matthew's, Bethnal-Green (in which by the bye ſtand three private mad-houſes) made no return to the general hall during the laſt year, of either births or burials, and in the year 1769 he returned only four burials; whereas in former years this pariſh alone uſually returned 3, 4, and ſometimes 500 burials. I was aſſured, that the company of pariſh clerks, in their corporate capacity, *even if willing*, want power to compel their perverſe brother of Bethnal-Green to make more regular and correct returns: it ſeems almoſt optional. This fact alone ſhews, with what diffidence calculators or phyſicians ſhould build up general propoſitions upon ſuch ſuſpicious foundations; eſpecially, when they undertake to reduce thoſe calculations to extreme nicety, even to minute fractions.

SEVERAL, indeed the majority of the pariſh clerks, however reſerved and niggardly they might be in communicating their information,

formation, converſed with me on the ſubject of the bills with civility: the only exception was the pariſh clerk of St. Paul's, Covent-Garden: he told me quite abruptly, that every thing relating to the bills was a ſecret known to the pariſh clerks alone; that he would not divulge either the parochial or corporation myſteries; and with all the vulgar airs and geſtures of opinionated ignorance, emphatically added, that the pariſh clerks were a *corporate body*; and if I was about to write any thing to injure the corporation, he would ſubſcribe *five hundred* pounds to a fund for the purpoſe of carrying on a proſecution againſt me. I entertained too great contempt for his little knowledge, his ridiculous affectation of importance, or his threats, to continue the converſation, and departed.

Every ambiguity reſpecting the preſent complicated police of the London bills, being cleared, I proceed to offer my plan of reformation. The pariſhes, (but not all the burying-grounds in thoſe pariſhes) now comprehended within the London bills of mortality, amount to 147; of which 97 are within the old walls of the city; 17 without the walls, but within the city liberties; 23 out-

pariſhes

pariſhes in Middleſex and Surry, and 10 out-pariſhes in the city and liberties of Weſtminſter. All the 97 pariſhes within the walls, have not for many years paſt, at a medium buried 2000 annually; ſome of them do not make a return of a ſingle burial in ſeveral years. We may name ſeveral pariſhes without the walls, any two of which united, return a number of annual deaths, equal to the 97 pariſhes within the walls: ſuch are St. Giles's, and St. James, Weſtminſter; St. Margaret, Weſtminſter, and St. Martin in the Fields; St. Leonard, Shoreditch, and St. Mary, Whitechapel, &c.

WITHOUT attending to theſe abſurd and unequal parochial boundaries, I propoſe, inſtead of an uninformed rabble of 147 pariſh clerks, and 294 female ſearchers, to exonerate the bills from this cumbrous machinery; to divide the metropolis, ſuburbs, and contiguous villages, into 27 or 28 equal diſtricts; in each of which, for a few years back, there have been 1000 deaths. If therefore the annual mortality of the metropolis and ſuburbs amounts to 27 or 28,000, 28 inſpectors only of the dead will be required, to each of whom I would at firſt allot the moderate ſum of 60 l. per annum ſalary; and they ſhould be choſen

from amongſt medical men, ſurgeons or apothecaries. As the funds increaſed, which to a certainty I ſhall demonſtrate they would, the inſpector's ſalary ſhould be raiſed to 100l. annually, which is barely an adequate recompence for their trouble. The inſpector's view of the dead body, and his certificate, ſhould be indiſpenſible previous to interment; and inſtead of a mutilated regiſter of mortality, of whatever religious ſect, the deaths ſhould be reported to the general hall. Thoſe carried out of town for interment, together with ſuch foundling and parochial children who die at nurſe in the country, and are buried there, ſhould likewiſe be reported. Again, inſtead of appointing a perſon ignorant of the principles of calculation, and ſtill more ſo of medicine, to ſuperintend the general hall, to arrange and claſs diſeaſes, I propoſe to fill that important office with an able phyſician, and to allow him the reaſonable ſum of 200 pounds, annual ſalary.

THERE appears to me at preſent, no uſe nor neceſſity to return or to publiſh weekly bills: this was originally enacted, to warn the inhabitants and the government of the numbers deſtroyed by the plague, and the pariſhes that were infected. *Monthly* returns of births

births and burials would be ſufficient; and in the general yearly bill, the monthly mortality ſhould be kept in diſtinct pages or parchment ſheets, in order to point out the ſeaſons moſt noxious, and the reigning diſeaſes: or, if I may ſo expreſs myſelf, to mark the hurricanes, and the monſoons of mortality. In infancy, and the early parts of life, when the tide of devaſtation is ſtrong and rapid, the mortality ſhould be meaſured in ſhorter intervals. The firſt year from birth ſhould be divided into 2 or 3 interſtices, from birth to 3 months; from 3 to 6 months, when teething commences; from 6 months, to 1 year; from 1 to 2; 2 to 3; 3 to 4; 4 to 5; 5 to 10 years; and ſo on to 100. Thoſe who die in the firſt month before baptiſm, and of courſe are not included in the chriſtenings, ſhould be diſtinguiſhed, in order to determine more accurately the amount of the births. The mortality at different ages, by the ſame diſeaſe, ſhould alſo be marked.

In the general, monthly, and annual bills of births, weddings and mortality, and comprizing the ſum of all the diſtrict returns, names and places of abode, are to be buried in oblivion; and in theſe bills I pro-

poſe to arrange and to claſs diſeaſes in a much more comprehenſive and methodical manner than the preſent, which, in too many inſtances, are a mere farrago of diſeaſes and mortality. By carefully peruſing the two preceding chapters, the reader may ſee the vaſt circumference of medical, political, and philoſophical knowledge, which I would have the London bills to embrace. To leave no vacuity in the hiſtory of epidemical diſeaſes, the phyſician at the general hall ſhould keep a ſhort general regiſter of the weather, ſeaſons, winds, the ſtate of vegetation, and of the ſpring and harveſt in the neighbourhood of the metropolis; theſe, together with any remarkable aſtronomical obſervations, to be printed in ſeparate columns, and contraſted with the monthly and annual mortality.

All that is wanted to render the returns of births and chriſtenings for London compleat, is, that the clergymen of every religious ſect, ſhould be compelled by law to make a monthly return of their chriſtenings and weddings, to an appointed church in the neighbourhood or diſtrict, ſpecifying their religious ſect: theſe returns to be carried monthly with the deaths, by each inſpector, to the ge-

neral hall. In the chriſtenings, twins and tergemini ſhould be diſtinguiſhed from ſingle births, and when practicable, the illegitimate: this would at leaſt nearly aſcertain the ratio of prolific amours, and the fertility of matrimony. If the London inhabitants were alſo numbered every ſeven years in the fulleſt ſeaſon of winter, and in ſummer when the town is moſt deſerted, it would make the regiſter of births and burials ſtill more valuable; and by means of the clergy, churchwardens, and other pariſh officers, would be attended with no expence.

I DO not here enter into many leſs important minutiæ of regulations proper to erect and to conduct this eſtabliſhment; theſe might ſpeedily be adjuſted. All therefore that can be offered to obſtruct this, or ſome ſuperior ſcheme from being immediately adopted, is the want of funds to pay the phyſician and inſpectors. This difficulty may eaſily be ſurmounted. At preſent, the loweſt ſum allotted by law to the two female ſearchers is eight-pence, but they ſeldom receive leſs than 1 ſhilling, and from thoſe of better circumſtances, half a crown, or more. Now 28,000 ſhillings amount to 1400 pounds, which

which is 50l. to each inſpector. If half a crown is made the legal fee to thoſe in good circumſtances, and judging of this by the window tax or parochial rates, it would conſiderably raiſe the inſpector's ſalary: and as it is a tax which does not happen *once* in ſeveral years, no one can think of it as a grievance, eſpecially as it is now paid voluntarily.—To defray the expences of a writing clerk at the hall, of printing, paper, parchment, &c. the profits on the ſale of the monthly and annual bills would be fully competent: ſo that 200l. only are wanting to compleat the bills upon a rational plan. This ſmall pittance ſurely is no object to the metropolis: the ſavings from the feaſts, iniquitous exactions, and frauds of a ſingle pariſh, would be amply ſufficient; but are not the only reſources that can be well ſpared for ſo public a uſe.

Exclusive of an intolerable roll of national taxes, and of iniquitous parochial rates for various purpoſes, an enormous ſum is raiſed annually upon this metropolis by burials, by undertakers bills, and what is called church dues. For inſtance, the open burying-ground in ſome church-yards is

two

two guineas for an adult, half that ſum for a child, and double fees when the perſon has not been a reſident inhabitant of that pariſh. What ſmall dividend of the church dues the pariſh clerk may receive, I know not; he is paid 1 ſhilling for each certificate. But as by my plan the unwieldy multitude of ſearchers would be diſbanded, and the amen clerks, as they are vulgarly called, would be another uſeleſs fraternity, I propoſe, that the profits of the ſinecure which the clerks would then enjoy, be equally divided between them and the ſearchers during their lives; and as each arrived at the end of their terreſtrial journey, the fees to be appropriated to the inſpectors, and to the ſupport and economy of the bills. In imitation of the court diſpoſal of their idle penſioners, I would mount the two old female ladies behind each pariſh clerk. Neither do I wiſh to deprive the clerk at the general hall of his intire ſalary during life: to rob an individual in his old age of his principal ſupport, is not my intention: but the pariſh clerks are not in the ſame predicament; all of them follow ſome trade or vocation, and many of them ſeveral trades in conjunction, with very little

interruption

interruption from the bills of mortality; their wives equally well officiating in receiving the ſearchers reports, and granting certificates.

A SMALL tax upon that motley multitude who in London ſubſcribe themſelves undertakers, would amount to a conſiderable ſum; and as many of theſe gentlemen live and grow rich by death, it is but fair that they contribute a ſmall pittance of their large profits to the bills of mortality.

IT is moſt devoutly to be wiſhed, both for the health and comfort of the metropolis, that all, or at leaſt the majority, of the burying-grounds were ordered to be formed in ſome dry ſpots of ground, at the different extremities of the city, and that the dead were more detached from the living. No one whoſe curioſity for information has led him to theſe melancholy wrecks of human vanity, and to behold the yawning mouths of ſepultures, can think without pain on the manner in which 28,000 corpſes are annually crammed together into various holes, corners, and public thoroughfares of this city: a feeling mind muſt ſhudder at, and ſhrink from, the deſcription. Let a reaſonable

able tax be paid to the church in thoſe new burying-grounds. I know the difficulties of reformatation when it attacks ſacerdotal perquiſites, and I am willing to continue to them their revenue upon burials.

Such are the outlines of my ſcheme for reſcuing the London bills from ignorance and anarchy. By this inſtitution the annual waſte of the metropolis, which muſt be recruited from the provinces and country towns, would be exactly known; a knowledge in which all the kingdom are equally intereſted: a rich fund of medical and political knowledge would in a few years be amaſſed, which we may in vain ſquander our health and eye-ſight in ſearch of, in the drudgery and barren induſtry of wading through unwieldy volumes: calculators of annuities and reverſions of lives, would then be furniſhed with certain data; and if general annual returns of chriſtenings, weddings, and burials throughout the kingdom were likewiſe to be conducted in currents to the general hall, it would ſerve as a deep reſervoir of the moſt important intelligence—the population of the kingdom, and the numbers of different re-

ligious ſects might by that means be pretty correctly computed.

I WISH to place this medical and philoſophical obſervatory, or factory if you pleaſe, under the controul and direction of the Royal Society, who ſhould chuſe the phyſician and inſpectors: and it would not be unworthy of being taken under his Majeſty's protection, and of having ſmall apartments for a general hall in the new buildings at Somerſet-houſe. From this ſource infinitely more than can be collected, *upon the ſame ſubjects*, from the ſhreds, fragments, and meagre eſſays of unconnected individuals, however learned and aſſiduous, the Royal Society might aggrandize their annual publication, and excite an avidity for each volume of the Philoſophical Tranſactions amongſt the literati of Europe. To the patronage of that learned body, and of the Lord Lieutenant, and Members of Parliament for Middleſex, and the Britiſh metropolis, with all due humiliation, I conſign this rough ſketch: their ſuperior wiſdom will ſuggeſt many additional improvements.

THE

THE Sketch of a PLAN for keeping a Monthly Table or Report Book by each Inſpector of Deaths, Diſeaſes, and Caſualties in London. The Titles of each Column to be printed. This Diſtrict comprehending the following Pariſh or Pariſhes; to wit;

Diſtrict Mr. Inſpector.

1781 Jan. 1 2	Numbers who died in this month. 1 2	Place of abode.	Name.	Sex.	Age, years.	Age, months.	Diſeaſe or caſualty.	Cauſe if known.	How long ſick or afflicted; years, months, weeks, days, hours, minutes.	Batchelors, virgins, married, widowers, widows.	Abortives and ſtill-born, how near maturity, and if periſhed during labour.	Carried out of town for interment.

THE

THE Sketch of a PLAN for Clergymen's Reports of Chriſtenings.

1781 January.	Numbers chriſtened in this month.	Place of abode.	Name.	Sex.	Twins or tergemini.	Illegitimate if known.	Religious ſect.
1	1						
2	2						

THE Sketch of a PLAN for Clergymen's Report of Weddings.

1781 January.	Numbers married in this month.	Place of abode.	Names of each.	Age of each.	Firſt, ſecond, or third marriages, and on what ſide.	Religious ſect.
1	1					
2	2					

THE reader will pleaſe to obſerve, that no draft is here given of the general monthly bills, or of the yearly bills to be iſſued from the general hall, and comprizing a return of all the diſtricts in the metropolis, both with reſpect to chriſtenings, weddings, diſeaſes, burials, &c. &c. &c. A correct methodized table of *monthly* and *annual* mortality ſhould embrace every diſeaſe and caſualty known in the vocabulary of medicine, and regularly claſſed.

FINIS.

APPENDIX

TO THE

FIRST CHAPTER of OBSERVATIONS MEDICAL and POLITICAL, &c. &c. By W. BLACK, M. D.

CONTAINING

The Outlines of a PLAN, *for inſtituting a* DISPENSARY, *in order to diſtribute the Benefits of* INOCULATION *to the Offspring of all the indigent and laborious Orders throughout* London, Weſtminſter, *and* Southwark.

VARIOUS Diſpenſaries, Public Societies, and Hoſpitals, have been wiſely and humanely inſtituted, by the benevolent and affluent in London, to relieve the neceſſitous, who labour under diſeaſes or affliction, and to preſerve the lives of the community: ſuch are thoſe for lying-in women; for perſons drowned; aſylums for the blind, which in a great meaſure might have been prevented by inoculation; a magnificent palace for a few hundred lunatics, and a great many others. If we compare, and it is far from my intention to do it from any invidious purpoſe, the importance of thoſe different inſtitutions, with an Inoculating Diſpenſary, we ſhall find the latter entitled to the firſt conſideration, both in the light of humanity and national policy. For inſtance, on an average, there do not die in one year in London, above two hundred women in childbed, and of all the diſeaſes immediately attendant upon that ſtate; nor are there drowned annually above one hundred; whereas, by the ſmall-pox, including every pariſh and burial-ground, there die annually between two and three thouſand; and there is no other diſeaſe conſpicuous in the deſtruction of mankind, where we can produce mathematical demonſtration of being able to reſcue ſo many lives from the grave.

Contagious diſeaſes amongſt the horned cattle, have attracted the attention of the legiſlature; but hitherto the parliament, the metropolis, and the nation, have beheld with inſenſibility and indifference, the carnage of a contagious diſeaſe amongſt the human ſpecies.

In the preceding chapter (*of Obſervations*, &c. &c.) it has been demonſtrated, that Inoculation at the expiration of ſixty years, ſince its firſt introduction, has made very little progreſs in London; that to effect any material diminution of mortality by the Small-pox in cities, inoculation muſt be practiſed at an early age, and at the private houſes of the inhabitants of every rank; and that the alarms and apprehenſions of doing more public injury than benefit, by diſperſing the infection from Inoculation, are ill founded. As one proof out of many others, that the arguments advanced in ſupport of the above important propoſition are unanſwerable, they have ſeemingly, at leaſt, produced a ſudden converſion and total revolution in the ideas of one of the greateſt Engliſh champions againſt general Inoculation in London, and other cities; I mean Baron Dimſdale. Since the publication of my *Obſervations*, &c. &c. the Baron has been very lately at the expence of a new edition, of what was formerly called his *Thoughts on General and Partial Inoculations*; for the glaring purpoſe of eraſing every page and ſyllable in that work, which militated againſt general Inoculation in London; and in ſupport of which pernicious doctrine, he has perſiſted ſo many years in writing books and pamphlets: the Dedication to the Empreſs of Ruſſia, and a detail of the Baron's tour to that country, make one half of this laſt haſty production to which I allude; immediately after, and in the center, are buried what was before called his Thoughts on General and Partial Inoculation: the title page however is changed; the Baron himſelf has changed ſides, and makes ſeveral lame excuſes for his former errors; concluding at laſt with his hopes, that Inoculation may become general at private houſes in cities. As the Baron has thought it prudent to ſuppreſs the name of the author, from whom he manifeſtly received his information and correction, ſuch conduct lays me under the neceſſity of ſtating the true fact with this public notoriety.

Nothing now remains, but to chalk out, and to erect ſome ſimple and general inſtitution, to diſtribute the benefit of Inoculation, *gratis*, amongſt the young offſpring of all the laborious and indigent claſs in the metropolis, and by that means

means alone, to preſerve near two thouſand lives annually. An Inoculating Diſpenſary, muſt be a ſeparate and diſtinct inſtitution, and cannot, for obvious reaſons, be incorporated with any other public Diſpenſary. That ſuch a plan is eaſy and practicable, and can be effectually ſupported by a trifling expence, I ſhall now clearly demonſtrate: this is only a rough outline, and is ſubmitted with great deference to the amendments, and alterations, of men of judgment.

For the convenience of Inoculation, and of viſiting the ſick, this great metropolis may, I preſume, be divided into the *five* following *Circles*. In forming the partitions, I have taken to my aſſiſtance, the map and geographical chart of London, and the Bills of Mortality: I have attended in ſome degree, to the poverty and opulence of different quarters, their extent, compactneſs, and ſituation: fractional exactneſs cannot be expected; nor as I have ſhewn at full length in my Obſervations, ſhould the burials be taken as an exact index of population.

WESTMINSTER DISTRICT.

Two Phyſicians, one Apothecary, containing two Circles.

UPPER WESTMINSTER CIRCLE, including the pariſhes of Pancras, Marybone, Paddington, St. George's Hanover-ſquare, St. Ann's, Weſtminſter, and St. James's, Weſtminſter.

A line drawn from Charing-Croſs, through the Haymarket, and ending at the foot of Tottenham-Court Road, divides this circle from the reſt of the metropolis.

LOWER WESTMINSTER CIRCLE, including the pariſhes of St. Margaret's, Weſtminſter; Petty France and Pimlico; St. John the Evangeliſt, St. Martin in the Fields, St. Paul, Covent-Garden; St. Mary-le-Strand, St. Giles's in the Fields, St. George, Queen-Square, and St. George, Bloomſbury.

A line drawn from Temple-Bar to the end of Gray's-Inn-Lane, divides this circle from the city. The central part of this Diſtrict is ſomewhere near Soho-Square.

CITY of LONDON DISTRICT.

Two Phyſicians, one Apothecary, containing two Circles.

CITY of LONDON CIRCLE, including ninety-ſeven ſmall pariſhes within the walls; alſo St. Sepulchre, St. Bartholomew the Great and Leſs; St. Botolph Aldgate, Alderſgate, and Biſhopſgate; St. Bride's, St. Giles by Cripplegate, St. Dunſtan's in the Weſt, St. Andrew, Holborn; St. James, Clerkenwell; St. John, Clerkenwell, and St. Mary, Iſlington.

This circle extends on the river ſide, from Temple-Bar to the Tower.

WHITECHAPEL and WAPPING CIRCLE, including the pariſhes of St. Mary, Whitechapel; St. Luke, Middleſex; St. Catherine near the Tower; Trinity in the Minories; St. John, Wapping; Chriſt Church, Spitalfields; St. Leonard, Shoreditch; St. Matthew, Bethnal Green; St. Dunſtan's, Stepney; St. Paul, Shadwell; and St. George, Ratcliffe Highway.

N. B. Hackney being too remote, is not included.

The central part of this Diſtrict is ſomewhere near Moorfields.

BOROUGH of SOUTHWARK and SURRY DISTRICT,

Extending from Vauxhall, Lambeth, and Newington, including five pariſhes of Southwark, and Rotherhithe.

One Phyſician and one Apothecary.

The central part ſomewhere near London-Bridge.

Three ſmall houſes of eaſy rent to be hired, one in *Weſtminſter*, one in the *City*, and one in the *Borough*; which I call the three *Inoculating Diſtricts*. In each of theſe houſes, medicines are to be kept, prepared, and diſtributed. From the extremity of any one Diſtrict to the Inoculating

lating Houſe, or Diſpenſary, which ſhould be in the centre, will not be one hour's walk ; and to preſerve the life of their child, is no extraordinary effort of parental labour : in like manner, the Phyſicians reſiding in each *Circle*, will not have half an hour's journey to the extreme of their viſiting boundary. Each Circle has one Phyſician ; each Diſtrict one Apothecary ; *in all, five Phyſicians, three Apothecaries :* at firſt, they are all to officiate *gratis :* Inoculation to be performed by the Apothecary, at the Diſpenſary, in preſence and under the direction of the Phyſician : after Inoculation, none are to be brought back again to the Diſpenſary ; but when neceſſary, attended at their own houſes : their parents or friends alone are to attend to conſult the Phyſician, either at his own houſe, or at the Diſpenſary, where each Phyſician will attend three days in the week, two hours each day. Should any three families, in a contiguous neighbourhood, agree to have their children inoculated *at one time*, the Phyſician and Apothecary, on regular notice, and a Governor's recommendation, will wait upon them at their own houſes, and there ingraft the infection. The Governor's printed letter will ſpecify each Phyſician's Circle, his days of attendance, and place of abode. The Apothecary to reſide conſtantly at the Diſpenſary to perform Inoculation, and to make up preſcriptions. The trouble of Inoculation will be very light, and requires no anatomical ſkill. Suppoſing that *eighteen* each day were to be inoculated in London, that is, ſix to each Apothecary, and which can be done in a few minutes ; eighteen times three hundred and ſixty-five, makes in the year ſix thouſand eight hundred and ſeventy ; a number in all probability greater than will apply to a charitable Diſpenſary. Viſiting the ſick, is the moſt laborious office, and falls to the Phyſician.

The fundamental intentions of inſtituting an Inoculating Diſpenſary in London, are to inoculate at an early age, that is, under five years old, to inculcate the tranſcendent importance of this maxim upon the heads of families, to exhort and ſpur them to the practice, and to rouſe them from their fatal lethargy. Upon an average, more than fifteen thouſand annually undergo the Small-pox in the metropolis : ſuppoſe that one-third of theſe, or five thouſand, are of the laborious and indigent claſs, who would apply to a Diſpenſary ; yet even then, one half, or perhaps two-thirds of this five thouſand, will eſcape after Inoculation, without the neceſſity of Medical Preſcriptions ; at leaſt, the conſumption of drugs will be trifling : the medicines being confined to one ſingle diſeaſe, which attacks the ſame

perſon

perſon but once in life, will alſo be very few in number, and not coſtly, nor indeed would young children ſwallow many medicines. Therefore, as in the infancy of the inſtitution, it is propoſed, that the Phyſicians and Apothecaries officiate gratuitouſly, an extremely ſmall ſum will be ſufficient to defray the expence of drugs, and of three ſmall houſes, and to diſtribute the illuſtrious benefits of Inoculation, and of *ſkilful* medical advice on emergencies, amongſt all the laborious and indigent orders through every quarter of this metropolis. I pledge myſelf to find able Phyſicians and Apothecaries, who will undertake this duty. Many humane Gentlemen will offer themſelves to act alternately as clerks, to enter regularly in a book to be kept at each Diſpenſary, the names, ages, and place of abode of thoſe inoculated, with their recovery and death: from this book the monthly and annual returns are to be copied and publiſhed.

After the perſeverance of a few years in ſupporting this Inſtitution, there cannot be a doubt, that prejudices and intereſted oppoſition would be overcome; that Inoculation, which is yet in its infancy in London, would become a general practice in the early part of life; and that in a very ſhort time, either by the bounty of the legiſlature, or private contributions, ſalaries could well be ſpared to the Inoculators of the laborious and indigent orders. I would fix the ſalaries as low as poſſible; one hundred pounds annual ſalary to each Phyſician, fifty pounds to each Apothecary, and houſe-room in the Diſpenſary for the latter. The whole united ſalaries of Phyſicians and Apothecaries, the expenditure for houſe-rent, drugs, and every expence whatſoever, would not exceed *nine hundred pounds*. It is therefore an indiſputable fact, that more lives might be annually preſerved by this Inſtitution alone, than there would be pounds ſpent in ſupport of it. A much greater ſum is every year raiſed by voluntary contributions, for a ſingle, and I ſhould add, a moſt valuable and well-conducted charity in the City, the Alderſgate Diſpenſary, and five times that ſum for ſeveral hoſpitals.

This Inſtitution is to be ſolely appropriated to Inoculation, and none labouring under the natural Small-pox, to be recommended as patients. The latter are at preſent admitted as out-patients of the different Diſpenſaries and Hoſpitals, and are either preſcribed for, or viſited: ſo little ſucceſs, however, has the beſt advice and preſcriptions in the natural Small-pox, that it is right and prudent to warn the Inhabitants,

tants, not to truſt to that precarious and ruinous mode of protection.

Subſcribers of one guinea to be annual Governors, of ten guineas Governors for life; each to recommend, in the courſe of oue year, four patients, or three families *at one time*, to be inoculated: experience will beſt determine the numbers proper for each to recommend. All the rules reſpecting Treaſurer, Governors, Select Committees, and Elections, and all other Regulations proper for conducting this Inſtitution, may readily be copied from the other Diſpenſaries already erected.

It will be proper, that a ſmall conciſe pamphlet be publiſhed by the Medical Gentlemen, who aſſociate for the above humane purpoſe, to be printed at the expence of the public funds, to ſhew the inhabitants the neceſſity and importance of general and early Inoculation, and the inefficacy of Inoculating Hoſpitals: one of theſe pamphlets to be given to each Subſcriber, others to be diſtributed to the poor, others to be ſold at the low price of ſix-pence, or at the utmoſt, one ſhilling each; and it would be adviſeable to ſend a copy to coffee-houſes, and to each of the different clergymen in London, who, in a variety of ways, have it in their power to inſtruct and to enlighten the public in this eſſential ſubject, and to increaſe the Diſpenſary funds. Such a cheap publication will be neceſſary on other accounts, to ſilence envious or intereſted opponents to the practice of general Inoculation, and to remove the prejudices of the ignorant and uninformed. At the end of the pamphlet, the Scheme and Rules of the Diſpenſary, the names of the Phyſicians, Apotheçaries, Governors, and Subſcribers, to be annexed. It is, perhaps, ſuperfluous to obſerve, that every other great City in Europe, in proportion to the ſize of each, may adopt a ſimilar plan for General Inoculation.

F I N I S.

SCHOOL OF HYGIENE & TROPICAL MEDICINE
LIBRARY
5 JUN 1944